

NR/80 Series

Parts Catalog

First Edition (August 1980).

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PREFACE

This Parts Catalog contains listings and illustrations of the Field Replaceable Units (FRUs) that IBM Instruments, Inc. customer engineers will use in servicing the NR/80 Series of Nuclear Magnetic Resonance (NMR) Spectrometers.

Contents

This book consists of 4 chapters:

- Chapter 1, "Introduction," identifies the major components comprising the NR/80 NMR Spectrometer.
- Chapter 2, "Parts Identification and Listings," photographically identifies and lists the FRUs.
- Chapter 3, "Numerical Listing," lists the parts in numerical order
- Chapter 4, "Alphabetical Listing," lists the parts in alphabetical order

How To Use This Book

To locate or identify a Field Replaceable Unit of the NR/80, Customer Engineers can use either the Numerical Listing, the Alphabetical listing, the Table of Contents, or some combination of these cataloging tools. Locating parts is done by:

1. If you know the identifying number of a FRU and want to find out more about its placement or description:
 - a. Scan the "Numerical Listing" for the part number. Copy the Figure ID in which the part is illustrated, and the view number that is used to locate the part in that figure.
 - b. The Figure ID is in the form "1-n, 2-n, etc." The number before the dash appears in the Table of Contents, in "Chapter 2, "Parts Identification and Listings." Go the appropriately numbered section in Chapter 2 to locate the part. For example, if the Figure ID is 7-12, go to section 2.7 in Chapter 2 to search for the part.

- c. On the accompanying list (opposite the Figure), find the Description of the part, and the quantity used.
2. If you know the name of the assembly (or subassembly) in which a part is located:
 - a. Turn to the Table of Contents. Find the page number on which the assembly or subassembly is found. Note the page number. Open the Parts Catalog to the specified page.
 - b. Find the FRU in the illustration. Copy down the FRU Figure ID from the drawing.
 - c. Use this combined Figure ID to locate the Part Number, Part Description, and Quantity in the list on the accompanying page.
3. If you know the location of the assembly in which a part is found:
 - a. Turn to the Major Assemblies graphic. The basic geography of the instrument is shown here. Copy the name of the assembly in which your part is found, and turn to the Table of Contents.
 - b. Find the page number on which the assembly or subassembly is found. Copy this page number down. Turn to the specified page.
 - c. Find the FRU in the Figure. Copy down the Figure ID of the FRU from the illustration.
 - d. Use the combined Figure ID to locate the desired part information in the table on the accompanying page.

Related Publications

- NR/80 Service Manual, GC22-9107
- NR/80 and IR/90 Processor Service Manual, GC22-9117
- NR/80 Variable Temperature Unit Service Manual, GC22-9108
- NR/80 X-Y Recorder Service Manual, GC22-9109

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1.0 INTRODUCTION

This section identifies the major components of the NR/80 Series of Nuclear Magnetic Resonance (NMR) Spectrometers. These major components, identified in Figure 1, are the:

- Console Frame
- Magnet Frame
- Heat Exchanger.

In some instances, the major components are subdivided into other discrete subcomponents. These are identified in Figures 2 and 3.

The remainder of this book identifies the parts in these major assemblies or subassemblies:

- Console Power Supply
- AC Panel
- Console Frame
- Display Panel
- Homo-Hetero Decoupler
- Pulse Transmitter
- Diskette Drive
- X-Y Recorder
- Main Stabilizer and Magnet Power
- Processor
- Magnet Assembly
- Heat Exchanger
- Variable Temperature Controller
- Miscellaneous Parts

Figure 1-1. Major Components

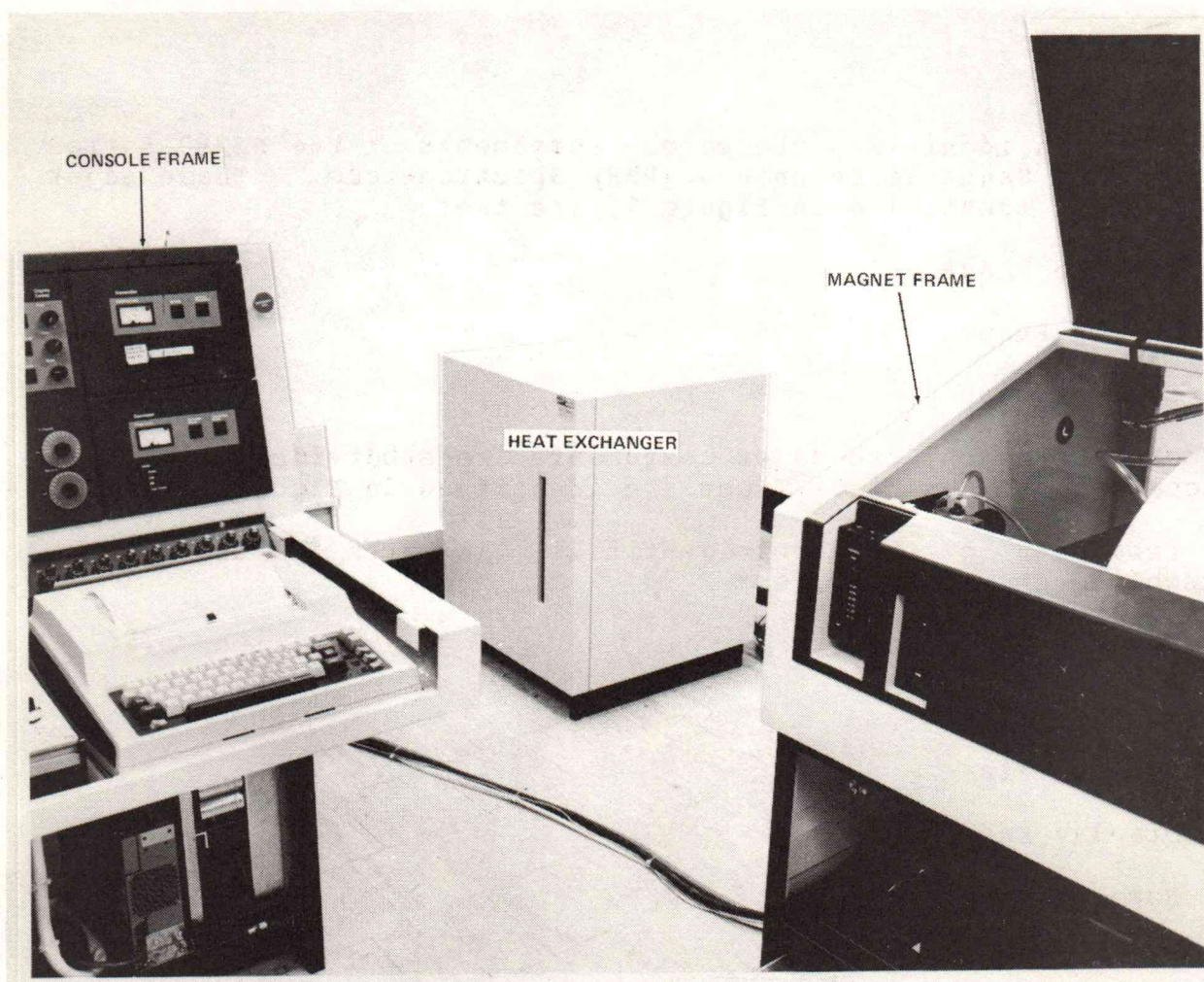


Figure 1-2. Console Frame and Subassemblies

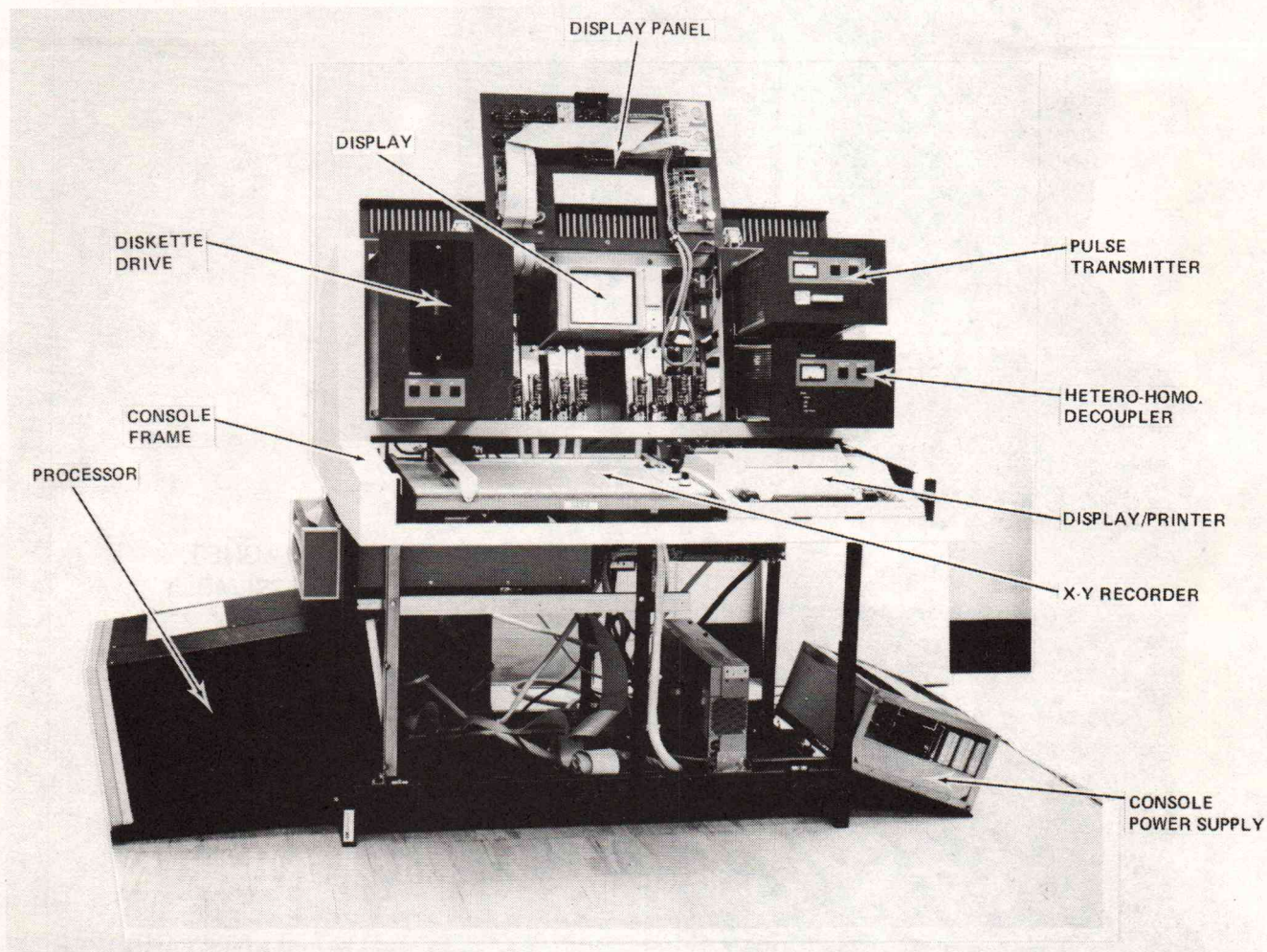
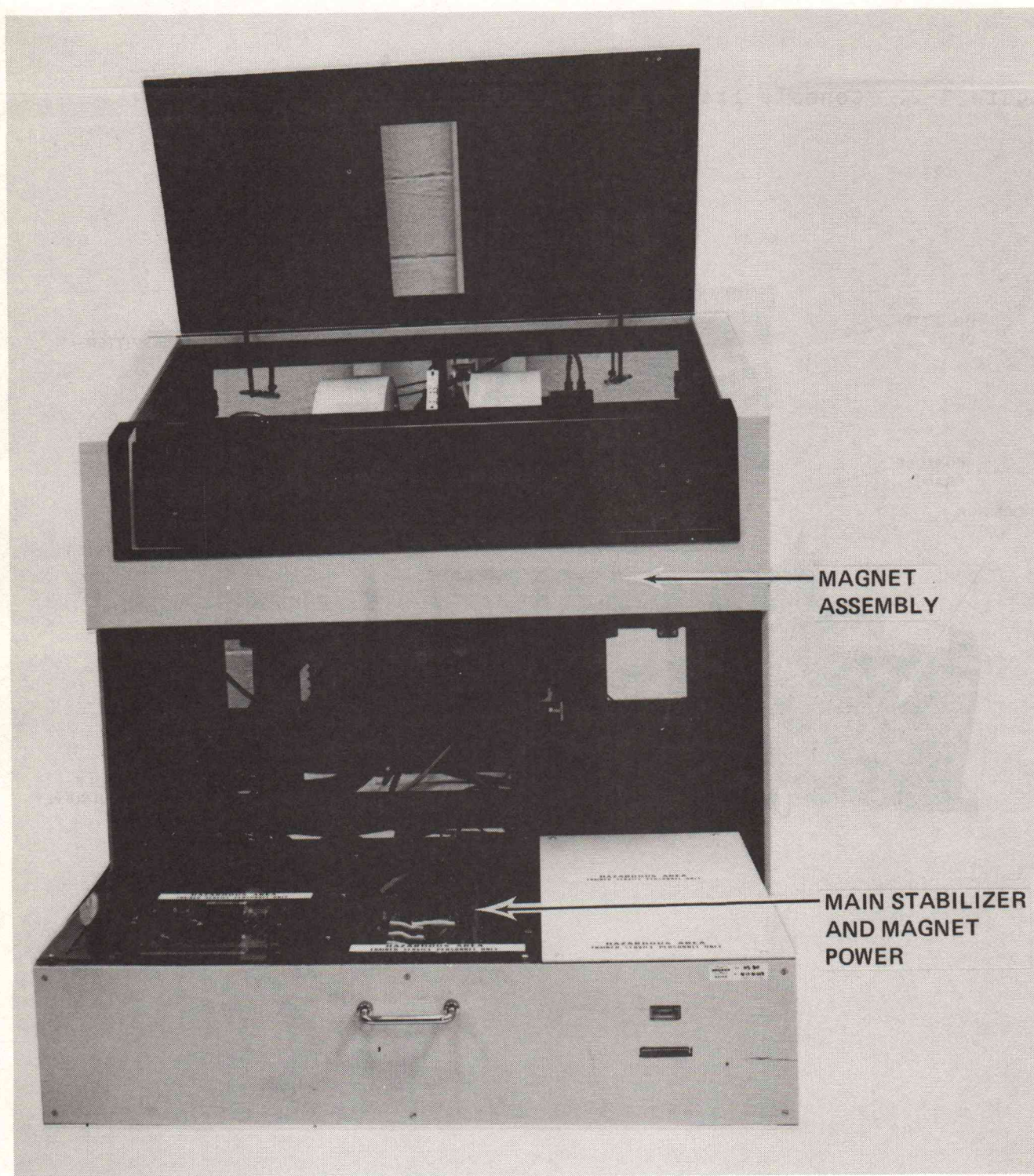


Figure 1-3. Magnet Frame and Subassembly



2.0 PARTS IDENTIFICATION AND LISTINGS

This section contains a series of photographs, called "Views," that identify the FRUs in the assemblies or subassemblies, and and catalog listing for the parts. The catalog listing for the part contains:

- Figure ID and View, which identifies the part on the Views.
- Part Number, which is the IBM Instruments, Inc. part number assigned to that particular part.
- Part Description, which briefly states the purpose of the part.
- Quantity, which lists how many of those particular parts are required in the assembly or subassembly.
- Supplier, which identifies the manufacturer of the part.
- Supplier Catalog Number, which identifier the manufactuer's part number of that particular part.

In some instances, there are no photographs of a particular part. In this case, an asterisk is used in place of a View number.

2.1 CONSOLE POWER SUPPLY

FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
1-1 V1	5670276	Console Power Supply (Entire Assembly)	1	Bruker	
1-2 V1	5670273	15 V, 15 V, 28 V (PCB)	1	Bruker	
1-3 V1	5670272	19 V, 24 V (PCB)	1	Bruker	
1-4 V1	5670271	19 V, 19 V (PCB)	1	Bruker	
1-5 V1	5670269	25 V (PCB)	1	Bruker	
1-6 V1	4838012	Fan	1	ETRI	99xu 0181-000

View 1. Console Power Supply View 1

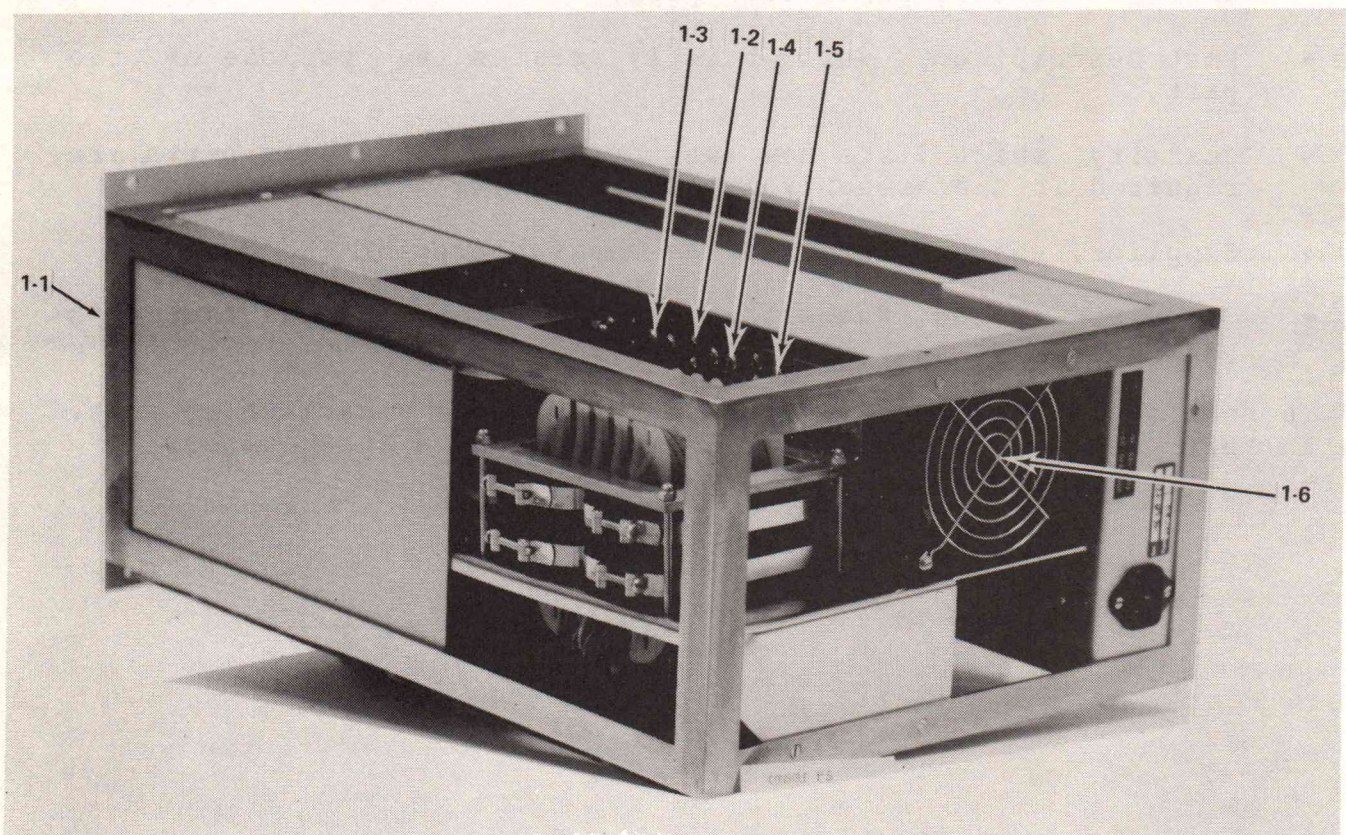


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
1-8 V2	5670268	Transformer	1	Bruker	
1-9 V2	5670275	Electriclytic Cap, Screw, 40/48V, 4.7K uF	3	Eurofarad	EAL 79.9
1-16 V2	5670311	Capacitor, 2.2 uF, 40/48V	4	Eurofarad	
1-17 V2	8679723	Terminal Blcck, 6 Position (white)	1	Metrofunk	L6A
1-23 V2	8672467	Fuse Clips	17	Wickman	00019520 00 0001
1-24 V2	6679874	Fuse, 3.15 A, FB, 250V	13	Littelfuse	

View 2. Console Power Supply View 2

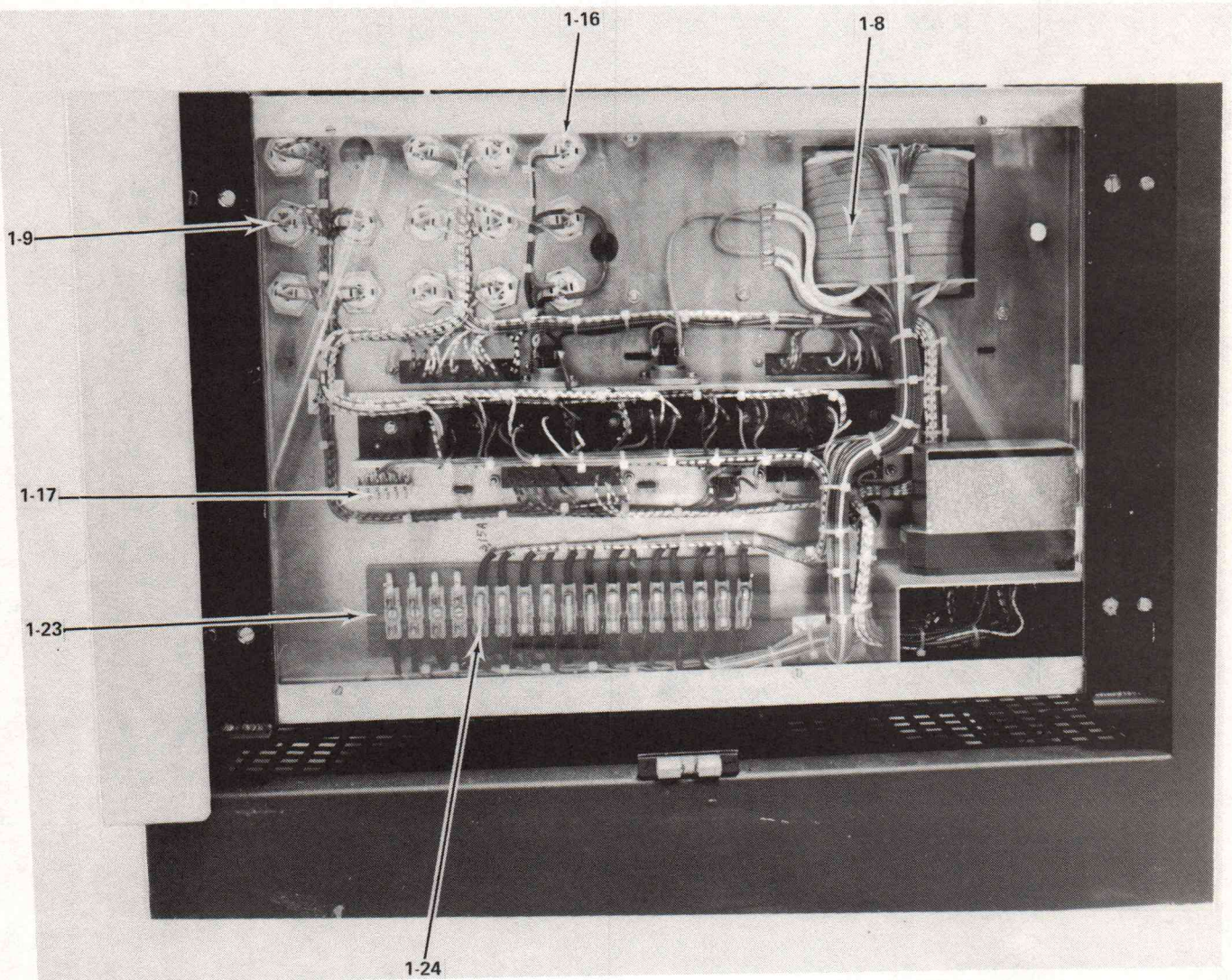


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
1-7 V3	8679720	Inductor	1	Bruker	
1-10 V3	5670346	Voltage Selection Switch	1	Bruker	
1-11 V4	5670310	Fuseholder (screw-in)	1	Wickman	SIL 032.1112
1-12 V4	6016983	Fuse, 6.3 A, MB, 250V	1		

View 3. Console Power Supply View 3

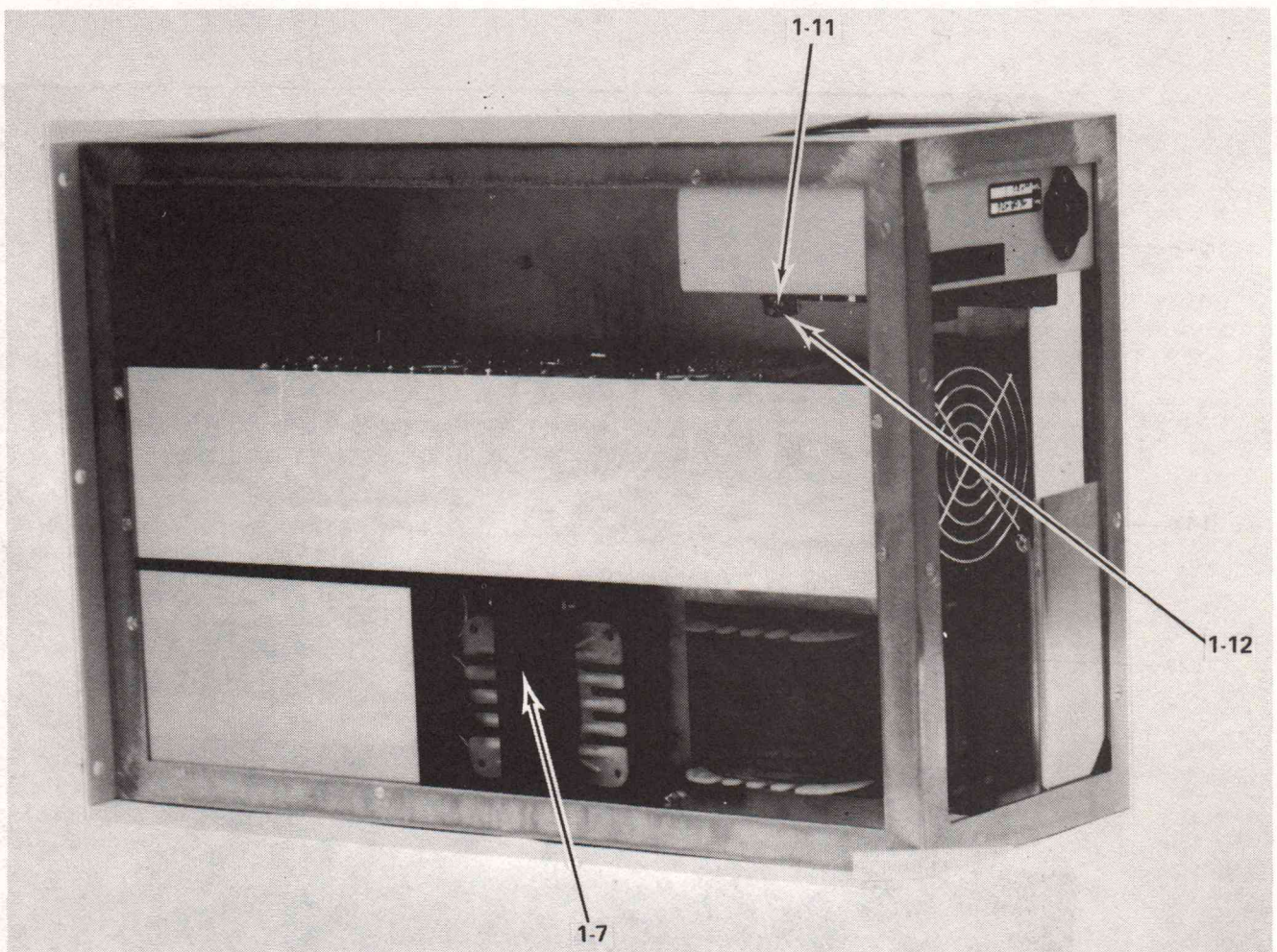


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
1-13 V4	4812466	Socket, 3 Prong Input Power	1	Ettinger	1216518
1-14 V4	5670309	Connector, 20 Position Output	1	Amphenol	2663 001

View 4. Console Power Supply View 4

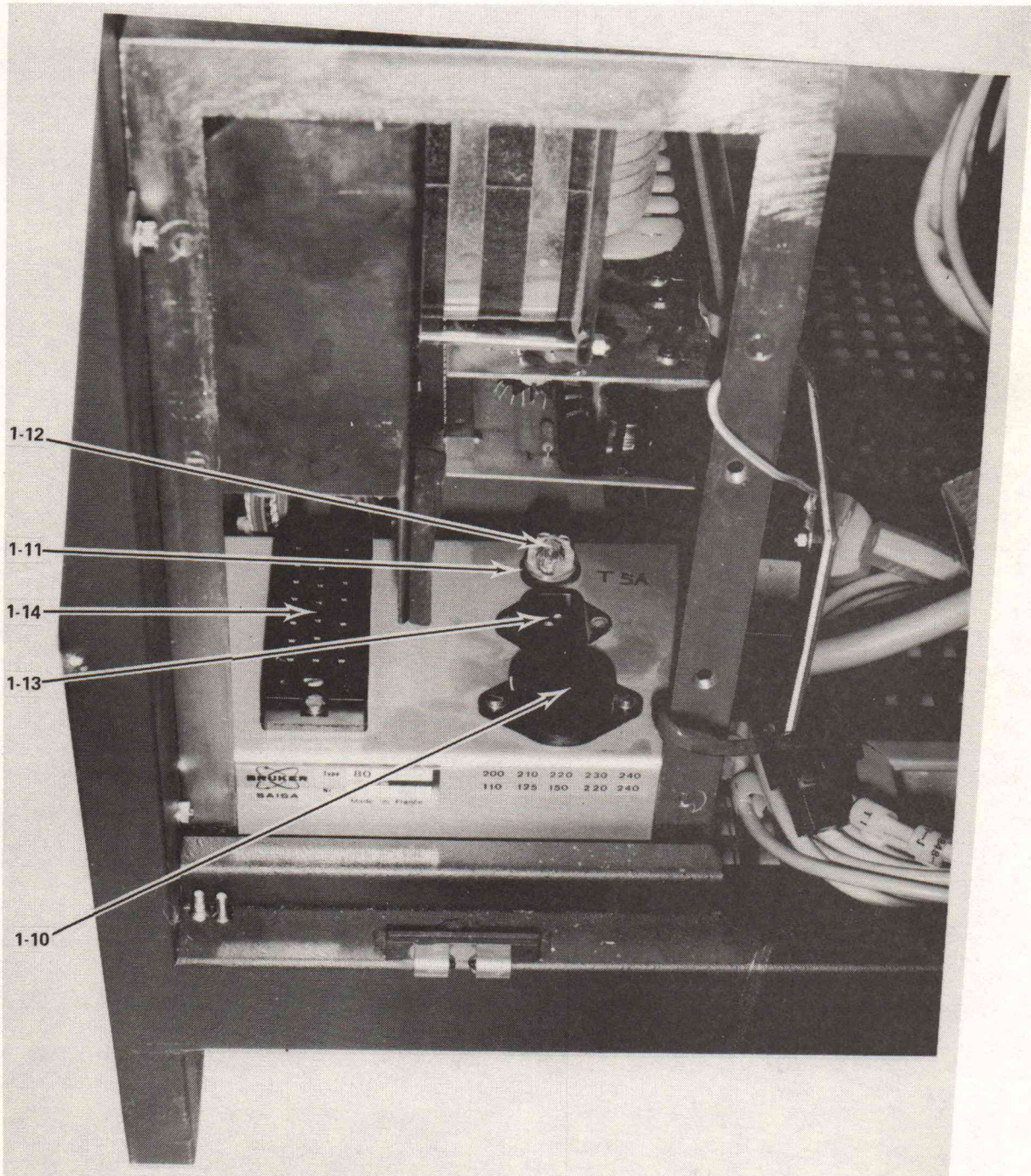


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
1-15 *	5670288	Regulator, 14V, IC	1	Micropac Ind.	42050-148
1-18 V2	8680575	Socket, 15 Position Card	1	Roschi	R102 3005
1-19 V2	8680592	Power Rectifiers (Middle of Heat Sink)	2	Varo	VS447
1-20 V2	8679650	Power Rectifiers (Side of Heat Sink)	3	Varo	IN4436
1-21 *	8680602	Heat Sink	1	Bruker	
1-22 *	5670274	Electrolytic Cap, 3.3K	F	1	Bruker
1-25 *	4838448	Fuse, 6.3 A, FB, 250V	2	Littelfuse	
1-26 *	4838475	Regulator, 9V, IC	1	Micropac Ind.	LAS 19U
1-27 *	5670283	Regulator, 28V, IC	1	Micropac Ind.	42050-284
1-28 *	6016884	Capacitor, 10K uF	1	Bruker	
1-29 *	567027C	19V, 19V, 28V PCB	1	Bruker	

2.2 AC PANEL

FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
2-1 V1	4838449	Socket, 5 Prong Male w/cover	1	OttoFischer Ag	F98015EW
2-2 V1	4838451	Power Receptacle, 3 Position, 220V	1	Sautter	3345 DESCO
2-3 V1	4838452	Connector, 19 Position Circular	1	Burndy	
2-4 V1	4838453	Connector, 34 Position	1	Bruker	MS34RM-1
2-5 V1	4433356	Connector, 25 Position Cannon	1	Cannon	DB25S

View 5. AC Panel View 1

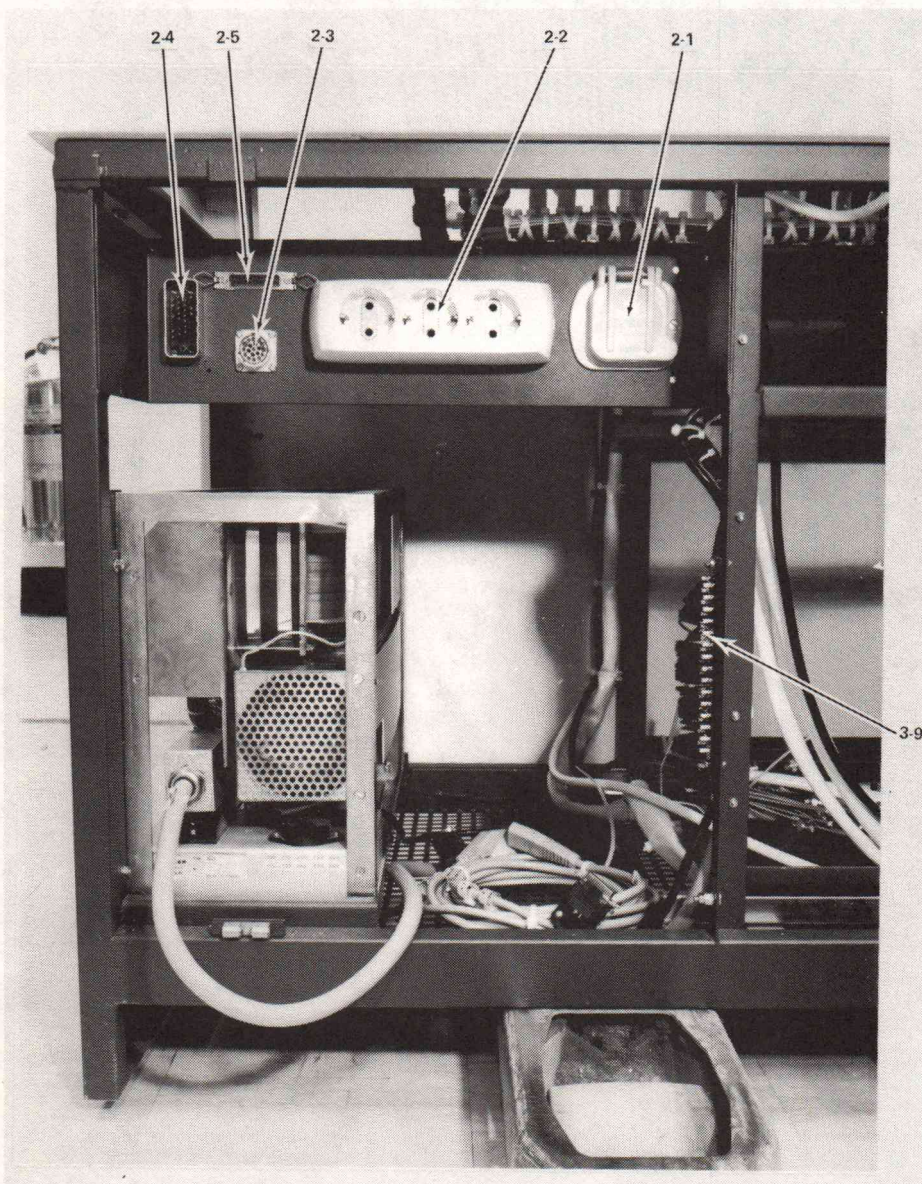
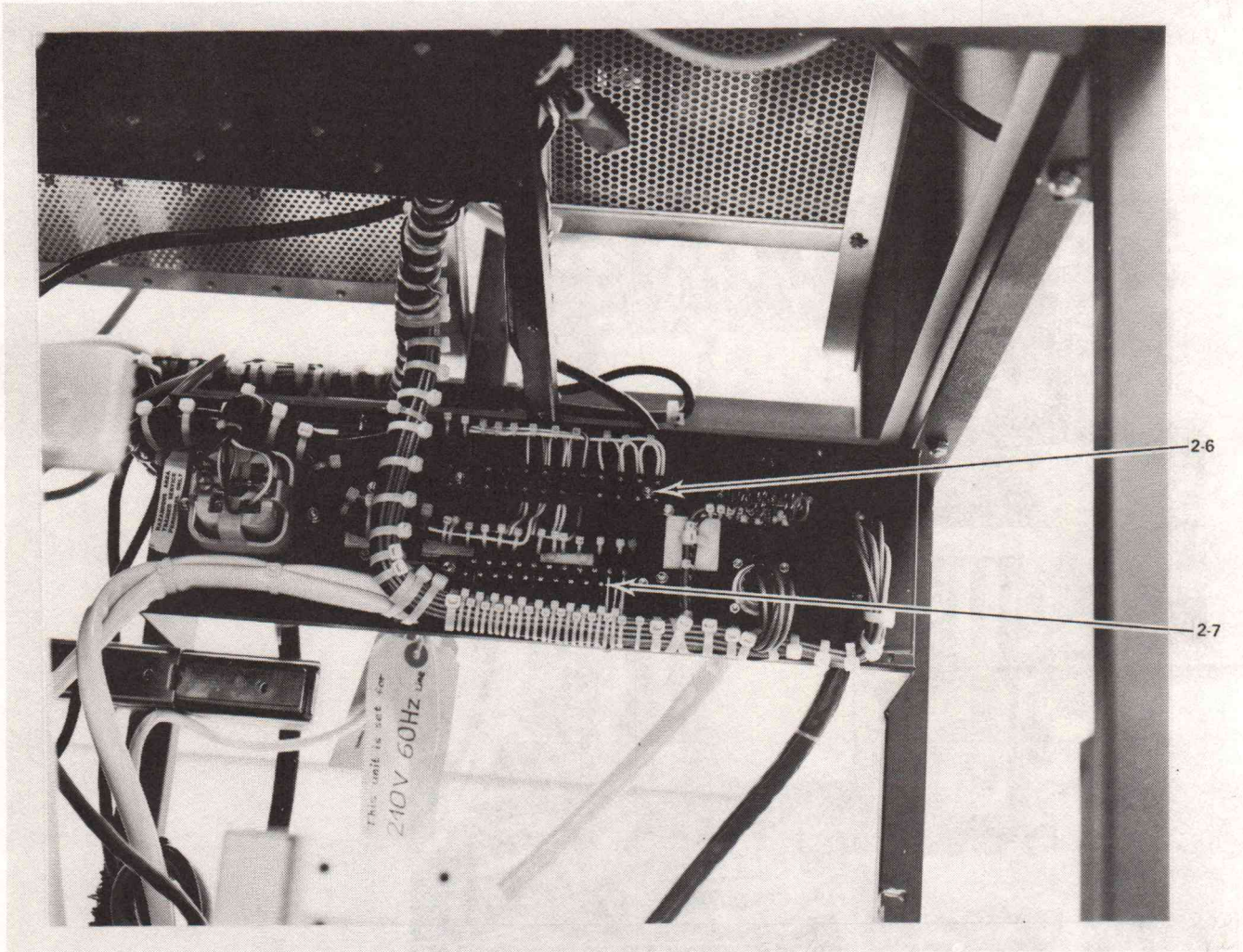


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
2-6 V2	4838454	Terminal Block, 24 Position (Screw)	1	Bruker	DB25S
2-7 V2	4838460	Terminal Block, 22 Position (Solder)	1	Ettinger	13.05.220

View 6. AC Panel View 2



2.3 CONSOLE FRAME

FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
3-1 V1	4838013	Emergency Power Off (EPO) Switch	1	IBM	

View 7. Console Frame View 1

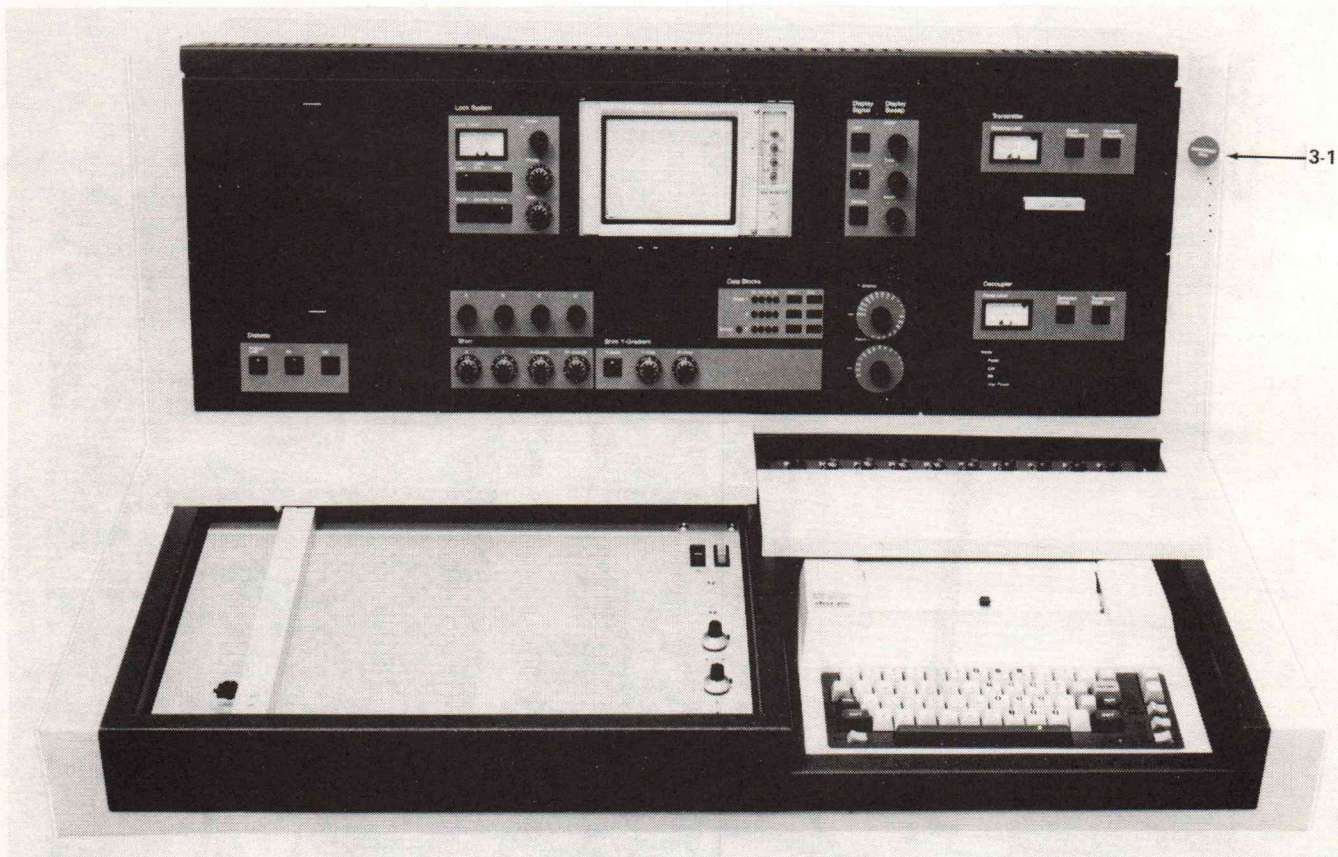


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
3-3 V2	4433356	Connector, Cannon, 25 Position	2	Cannon	
3-4 V2	8679676	Delta Sweep (PCB)	1	Braker	
3-5 V2	4838462	Socket, 31 Position	1	Kaco	KG31-031J4

View 8. Console Frame View 2

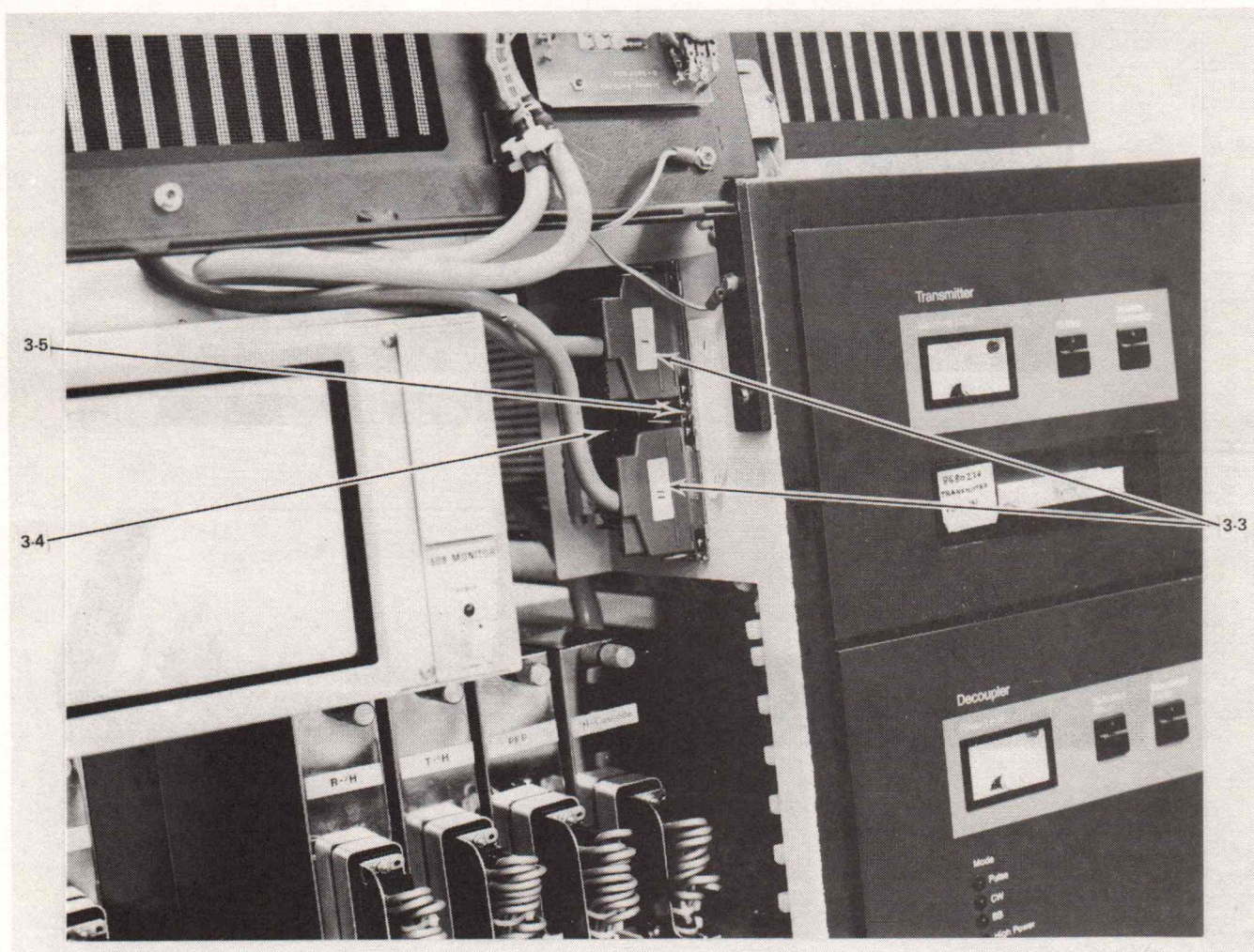


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
3-6 V3	4838463	Shim Pots, 10 Turn, 10K	9	Amphenol	P2151B
3-7 V3	4838464	Vernier Dials for Shim Pots	9		
3-8 V3	5670297	Mod. Pot. (1-turn), 1 MEG OHM	1	Draloric	

View 9. Console Frame View 3

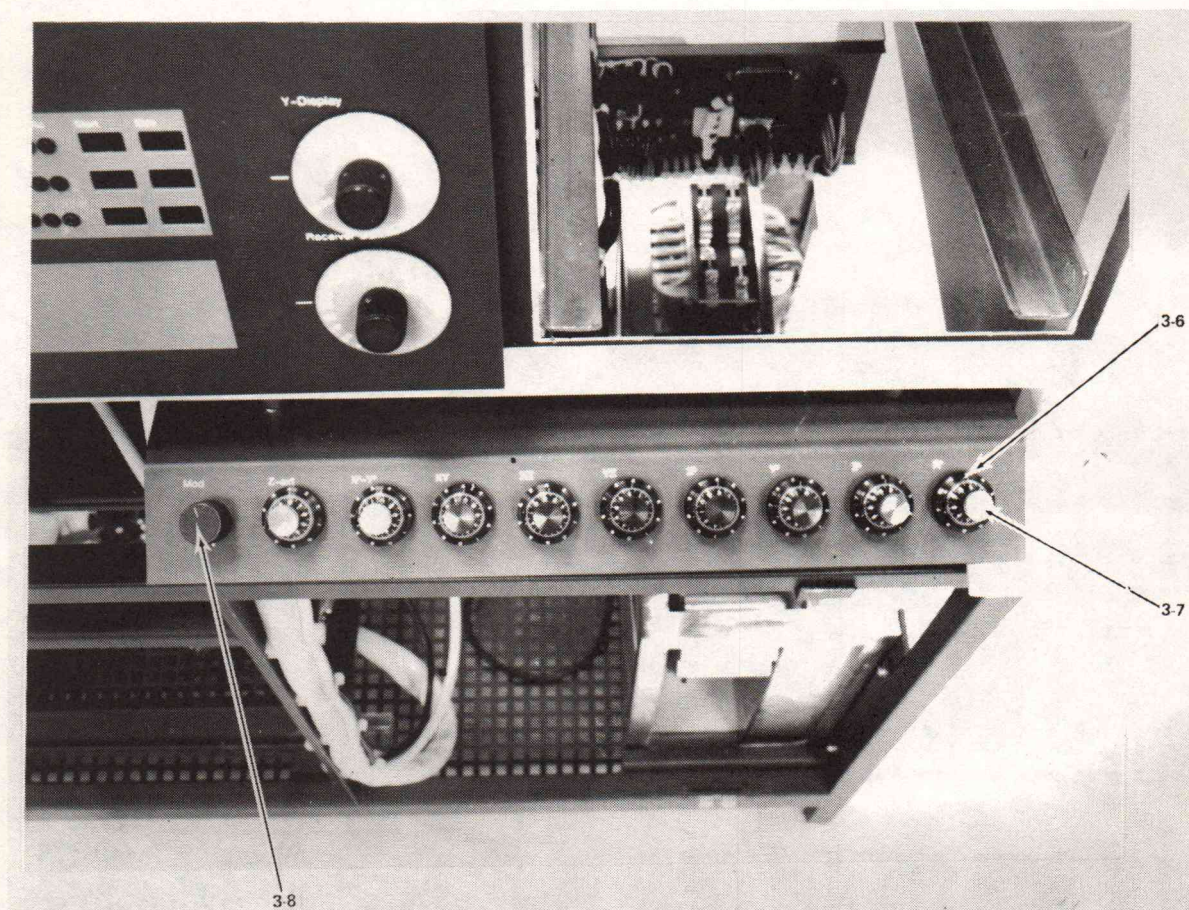


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
3-9 V4	4838466	Terminal Block, 30 Position (Solder)	2	Ettinger	13.05.300
3-11 V4	8680598	19F Lock (PCB)	1	Bruker	
3-13 V4	5670256	PFP 2D (PCB)	1	Bruker	
3-14 V4	5670257	Transmitter Lock 2D (PCB)	1	Bruker	
3-15 V4	5670258	Receiver Lock 2D (PCB)	1	Bruker	
3-16 V4	5670259	Receiver FT (PCB)	1	Bruker	
3-17 V4	5670260	Transmitter F1 (PCB)	1	Bruker	
3-18 V4	5670261	Transmitter F2 (PCB)	1	Bruker	
3-19 V4	5670262	Local Oscillator (Quartz) (PCB)	1	Bruker	

View 10. Console Frame View 4

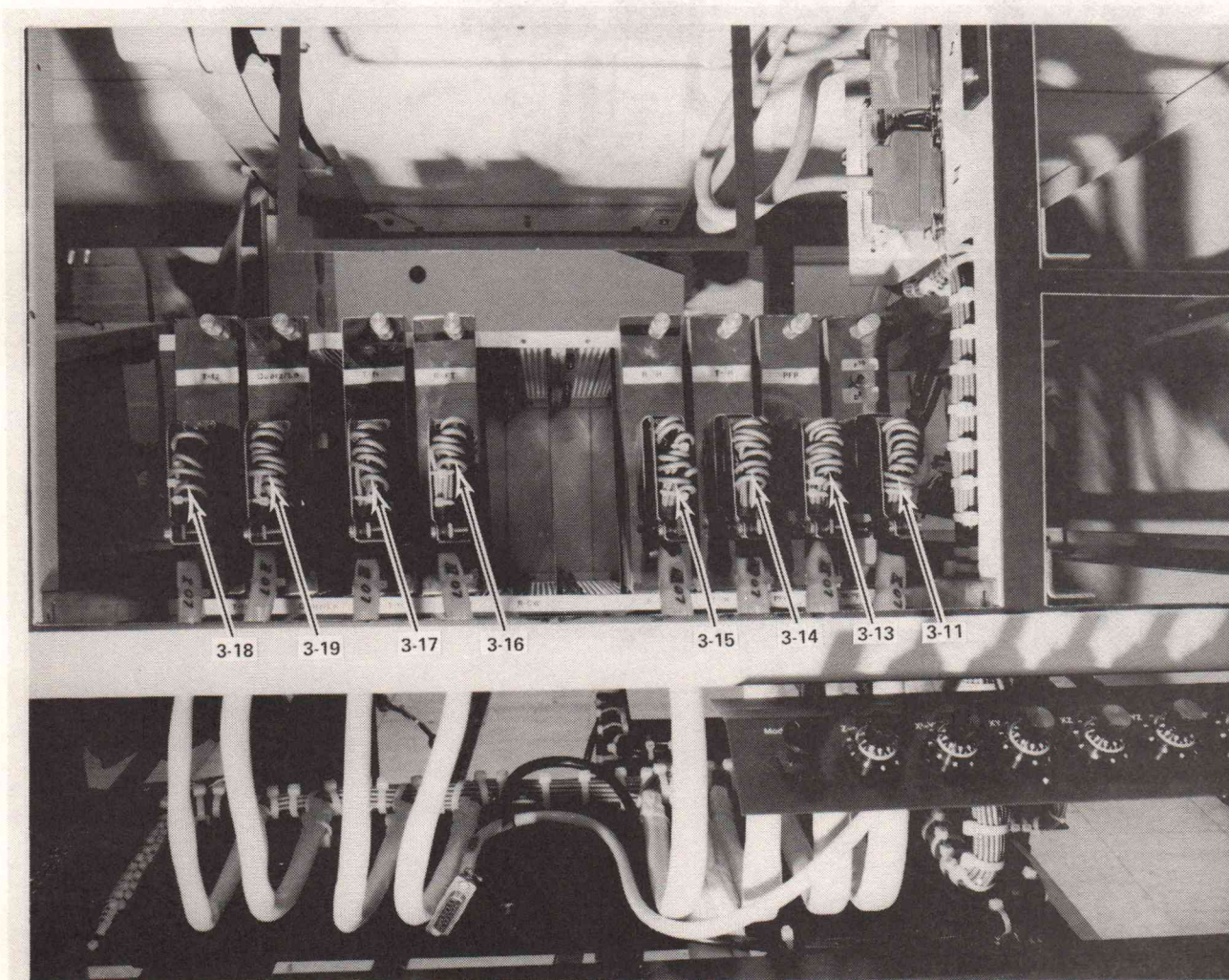


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
3-2 *	4838451	Power Receptacle, 3 Position, 220V	1	Sautter	
3-10 *	4838467	Line Filter	1	Corcom	10V1
3-12 *	5670255	Cascode 2D (PCB) (Preamp 2D)	1	Bruker	

2.4 DISPLAY PANEL

FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
4-1 V1	5670266	Lock Power Switch (PCB)	1	Bruker	
4-3 V1	8679664	Lock Level Meter Board (PCB)	1	Bruker	
4-6 V1	5670264	Comp., Lock, Sig. Disp. Switches (PCB) P1B	1	Bruker	
4-9 V1	5670263	Receiver Gain (PCB)	1	Bruker	
4-10 V1	5670267	Data Blocks (PCB)	1	Bruker	
4-12 V1	4838469	X, Y Fine Pots 500 OHM	2	Beckman	Helipot 7286
4-13 V1	5670265	Y-Automatic (PCB)	1	Bruker	
4-14 V1	4838463	Potentiometers, 10K, 10-Turn	6	Amphenol P2151B	
4-15 V1	8679846	Large Display Panel Flat Cable	1	Bruker	
4-16 V1	4838472	Vertical Display Scaler Cable	1	Bruker	
4-17 V1	4838470	Display Cables I & II	2	Bruker	

View 11. Display Panel View 1

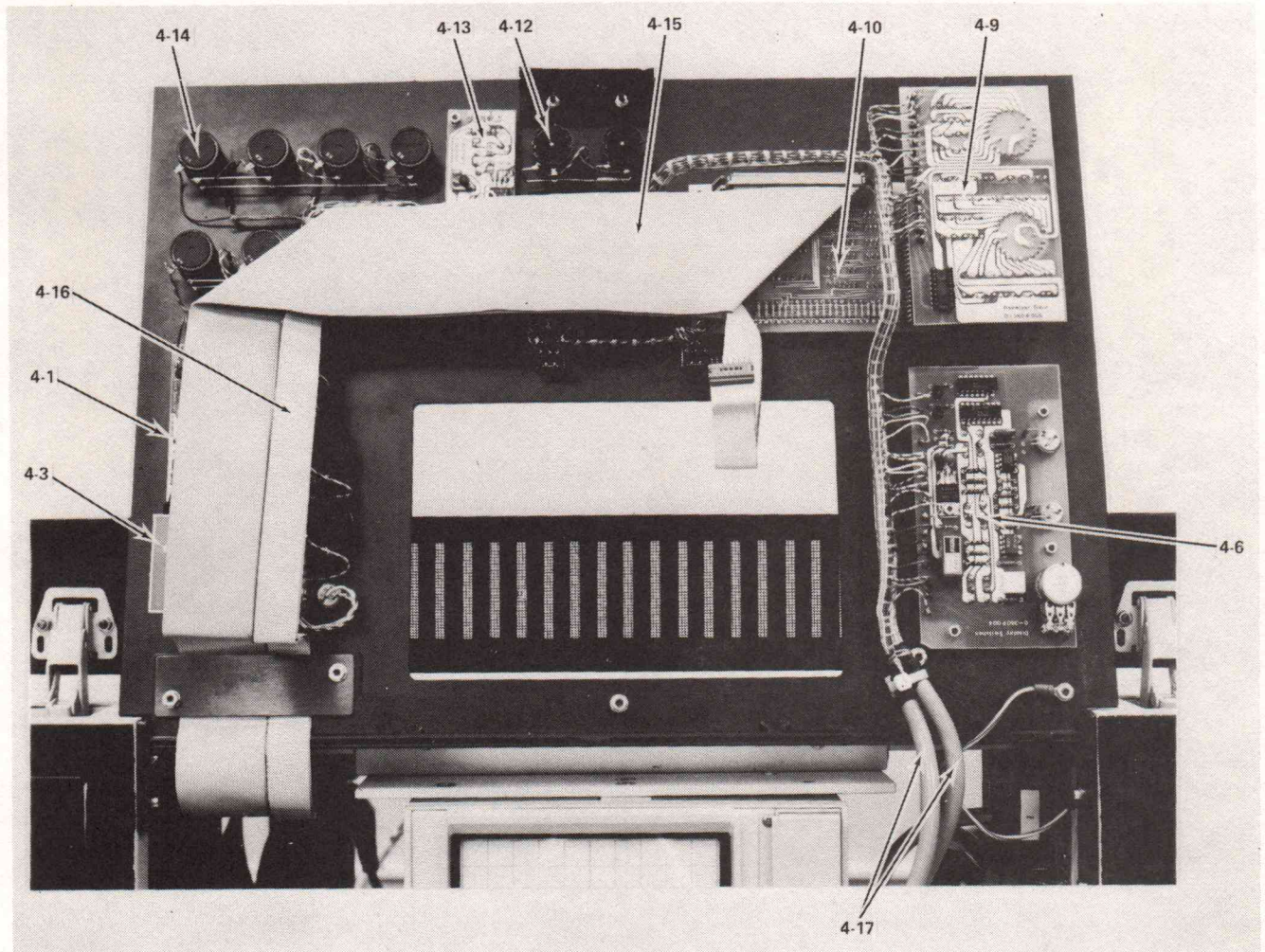
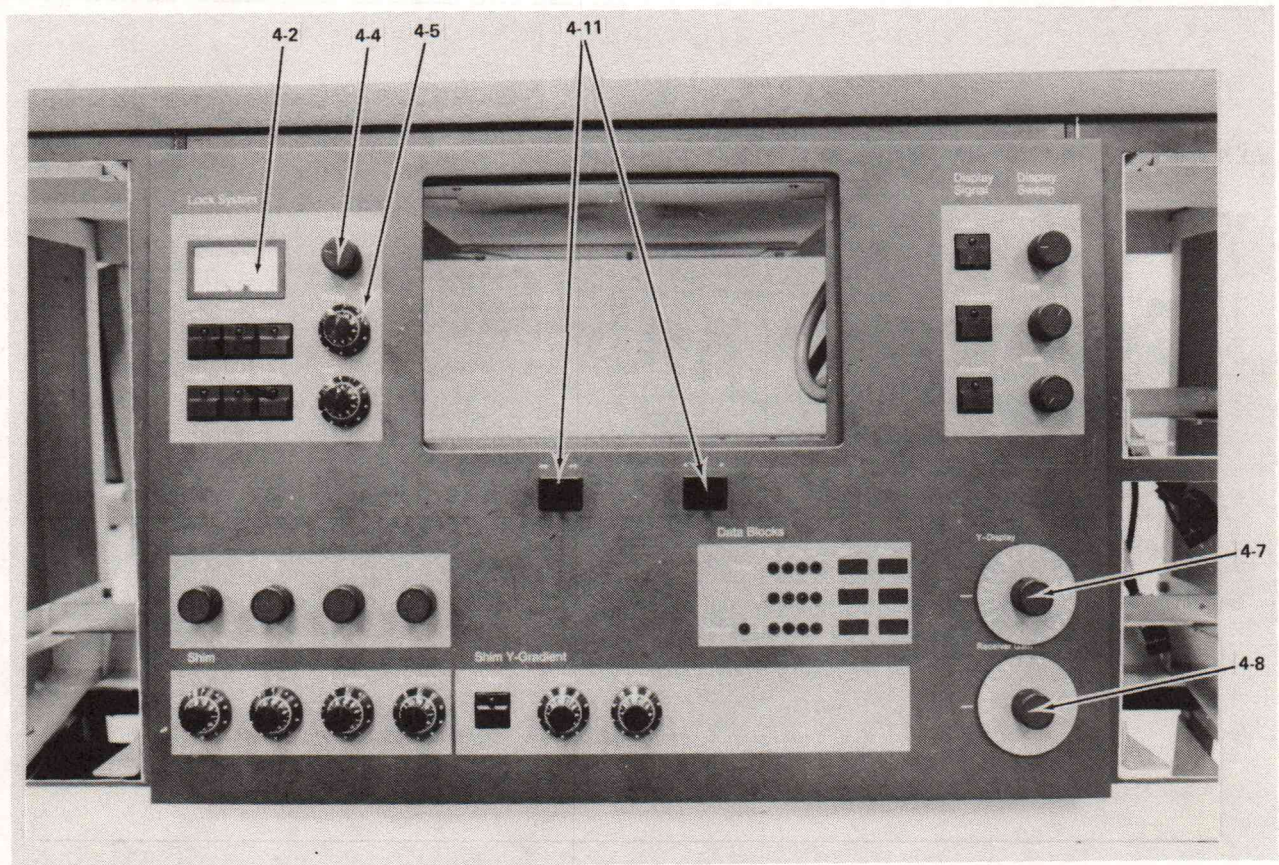


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
4-2 V2	4838468	Lock Level Meter	1	Neuberger	
4-4 V2	334235	Potentiometer, 10 K, 1-Turn	1	IBM	
4-5 V2	4838471	Phase/Pot 3 Turn	1	Amphenol	P7221E-3T
4-7 V2	4838474	Vertical Scale Dial, 4-2048K	1	Bruker	
4-8 V2	4838473	Receiver Gain Dial, 1-8K	1	Bruker	
4-11 V2	5670345	Sweep Switches (Fast & Slow)	2	Knitter	MDS106G

View 12. Display Panel View 2



2.5 HOMO-HETERO DECOUPLER

FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
5-1 V1	5670161	HH Decoupler (Entire Assembly)	1	Braker	
5-2 V1	8680599	On-Off Comm. Board (PCB)	1	Braker	
5-3 V1	8680601	Comp Dec and Attenuator Board (PCB)	1	Braker	
5-5 V1	4838476	Mismatch Control (PCB)	1	Braker	
5-6 V1	E680600	Digit Modulation (PCB)	1	Braker	
5-12 V1	4838480	Heat Sink Assembly	1	Braker	
5-15 V1	4838483	Refl/Transmit Power Ind. (PCB)	1	Braker	
5-17 V1	4838484	Meter Board (PCB)	1	Braker	
5-18 V1	4838485	Mode LEDs, (PCB)	1	Braker	151608

View 13. Homo-Hetero Decoupler View 1

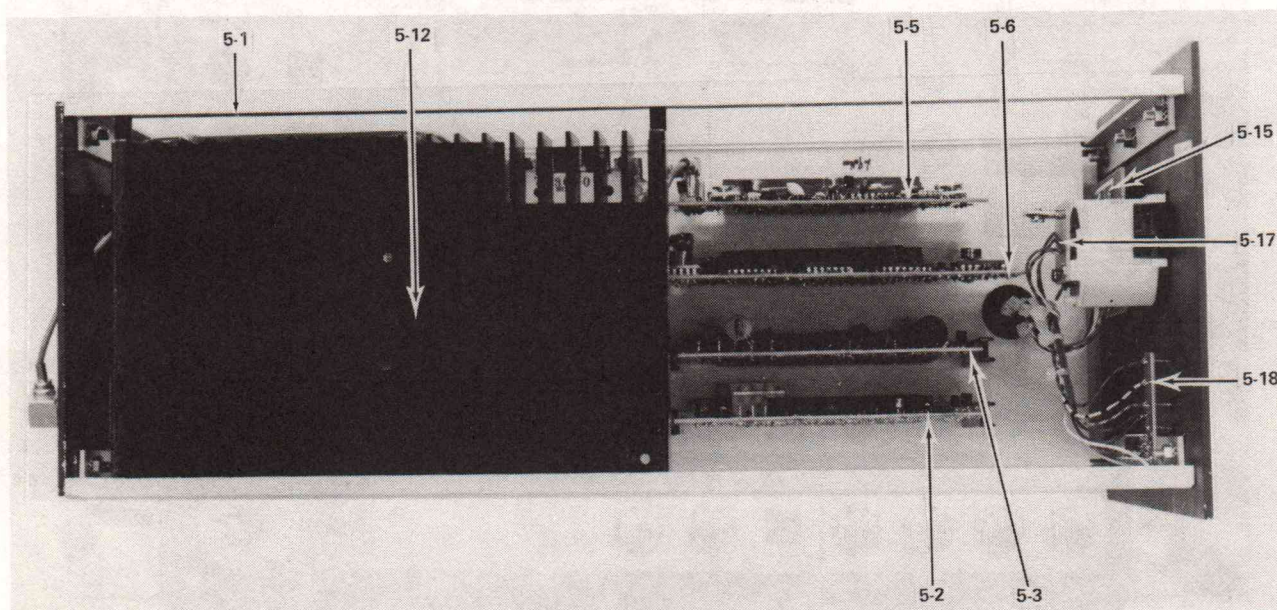


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
5-8 V2	4838477	Programmable Attenuator w/PCB	1	Bruker	VP45-CAB26
5-9 V2	4838478	Relay	1	Varley	
5-10 V2	4838479	Relay Socket	1	Varley	
5-11 V2	8680603	B.B. Amplifier Stage and Coupler (PCB)	1	Bruker	
5-13 V2	4838481	Filter Box	1	Bruker	
5-14 V2	4838482	Tripler, Frequency 1k Bruker	1	Microtherm	Type 161, 80°C
5-20 V2	6016887	Thermal Switch	1	TRW	CA2870
5-21 V2	6016855	Broadband Preamp1	1	TRW	CA2820*
5-22 V2	4812465	Broadband Preamp2	1	TRW	ML20
5-23 V2	8680572	Broadband Final Amp	1	Bruker	
5-29 V2	4838491	Coax Cable w/ Straight SMB Conn. 40 CM	1	Bruker	
5-30 V2	4838492	Coax Cable w/90 SMB Conn. 40 CM	1	Bruker	
5-31 V2	6016938	SMB Coax Cable Straight		Bruker	
5-32 V2	6016936	SMB Coax Cable w/90		Bruker	

View 14. Homo-Hetero Decoupler View 2

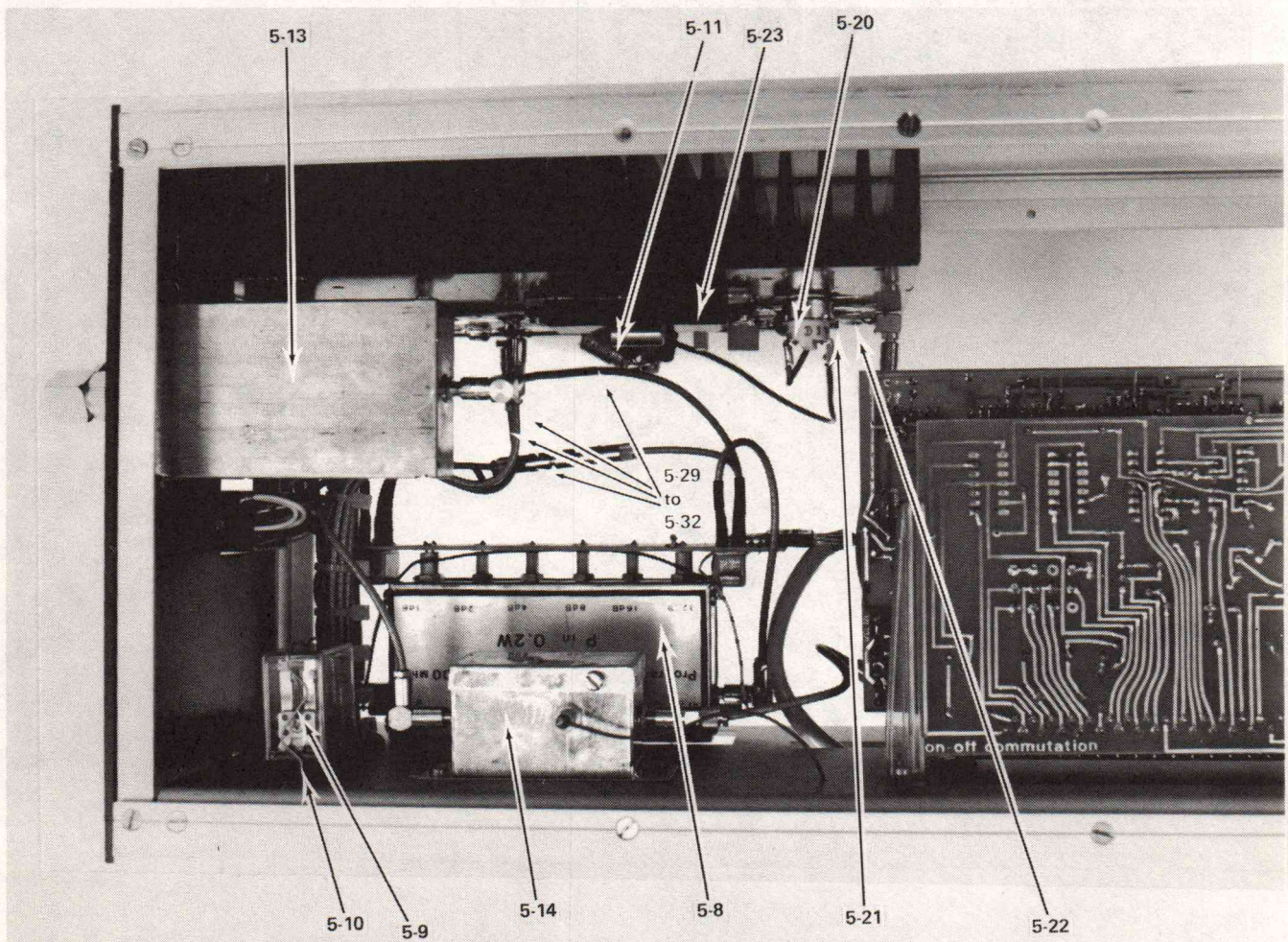


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
5-16 V3	8680604	Power Level Meter	1	Neuberger	IMA, 1-20W Scale

View 15. Homo-Hetero Decoupler View 3

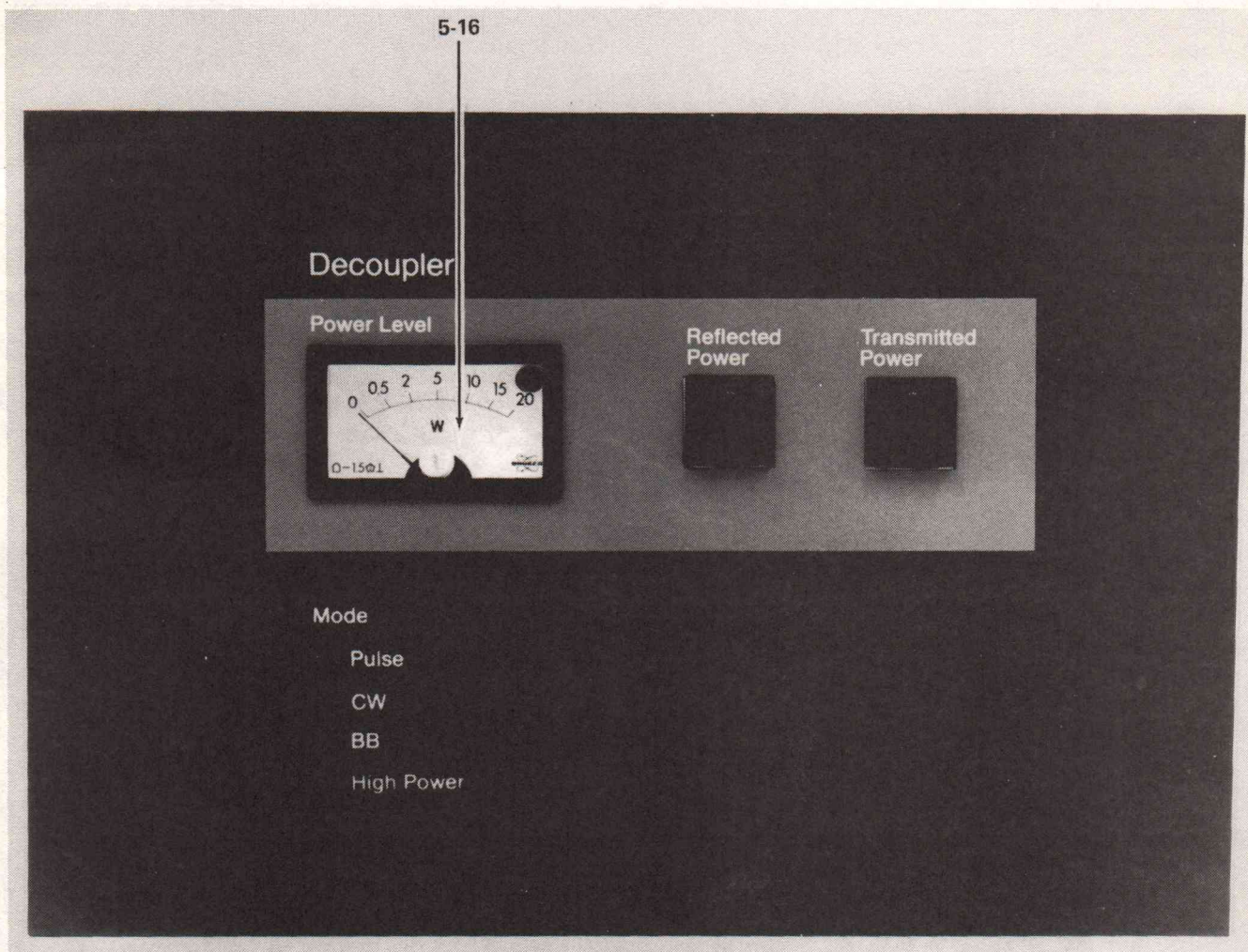


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
5-4 V4	4838462	Socket, 31 Position For PCBs	2	Kaco	KG31-031J4
5-7 V4	8680575	Socket, 15 Position For PCBs	2	Roschi	R102 3005
5-27 V4	4838489	Capacitor, .68 uF Filter, Ceramic	1	SCX7RL84X9100C5	
5-28 V4	4838490	Capacitor, 33 uF Tantalum, 16v	1	Sprague	150D684X9020A

View 16. Homo-Hetero Decoupler View 4

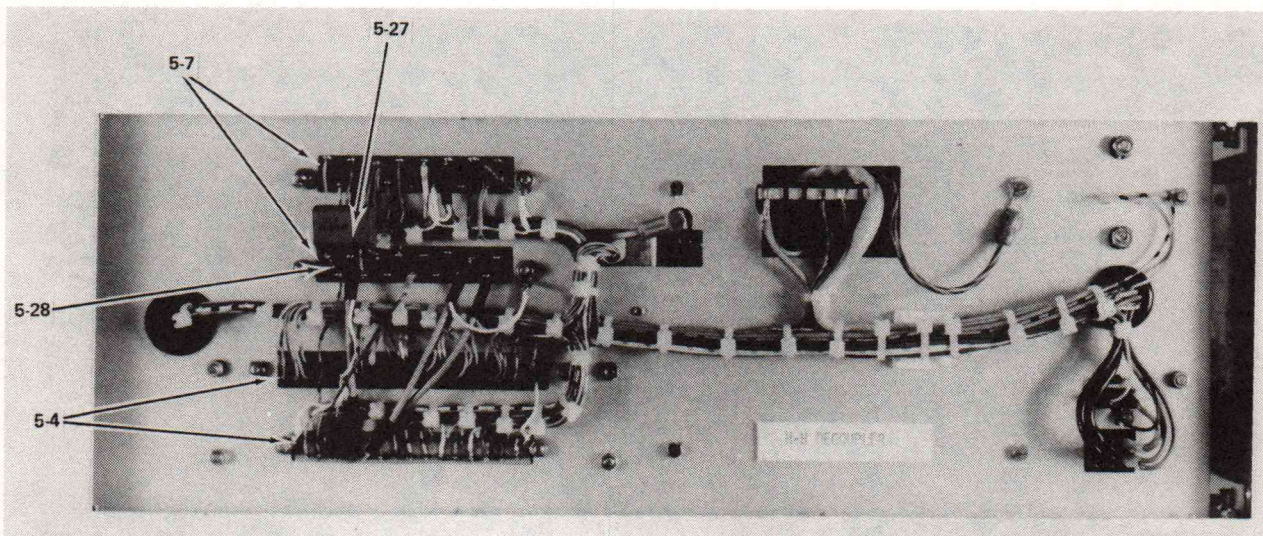


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
5-24 V5	4838486	Socket, DecI/DecII 34 Position Burndy	1	Burndy	MS34RM-1
5-25 V5	4838487	BNC Connector, Female	1	Amphenol	31-203

View 17. Homo-Hetero Decoupler View 5

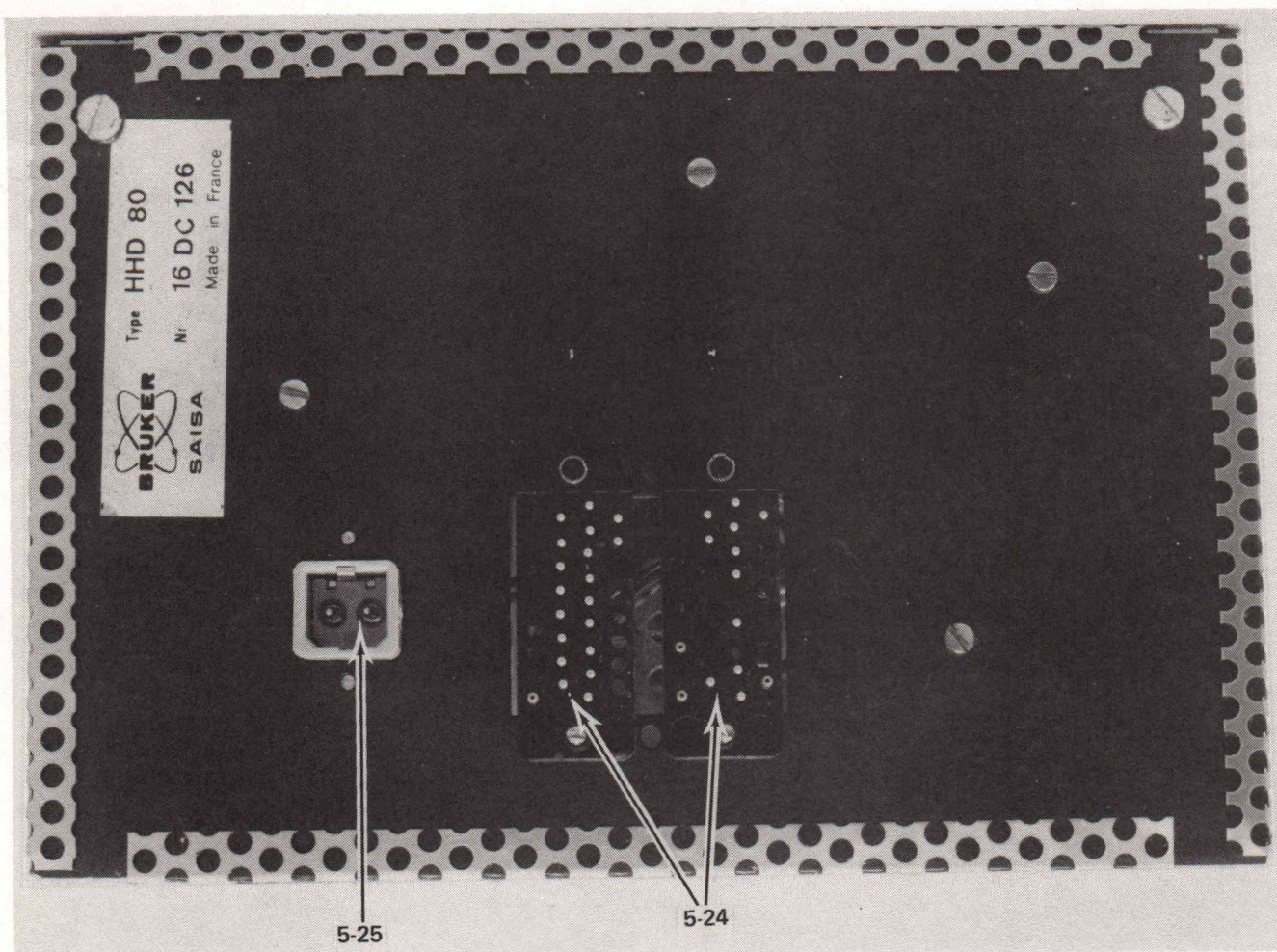


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
5-3 *	8680601	Comp Dec. and Attenuator Board (PCB)	1	Bruker	
5-19 *	6016885	Slow Device Code Decoder w/IAC	1	Bruker	
5-26 *	4838488	Regulator, + or - 15V, +5V (PCB)	1	Bruker	

2.6 PULSE TRANSMITTER

FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
6-1 V1	5670107	Pulse Transmitter (Entire Assembly)	1	Bruker	
6-10 V1	8680575	Socket, 15 Position For PCBs	3	Roschi	R102-3005
6-12 V1	4838453	Connector, 34 Position Burndy	2	Burndy	MS34RM-1

View 18. Pulse Transmitter View 1

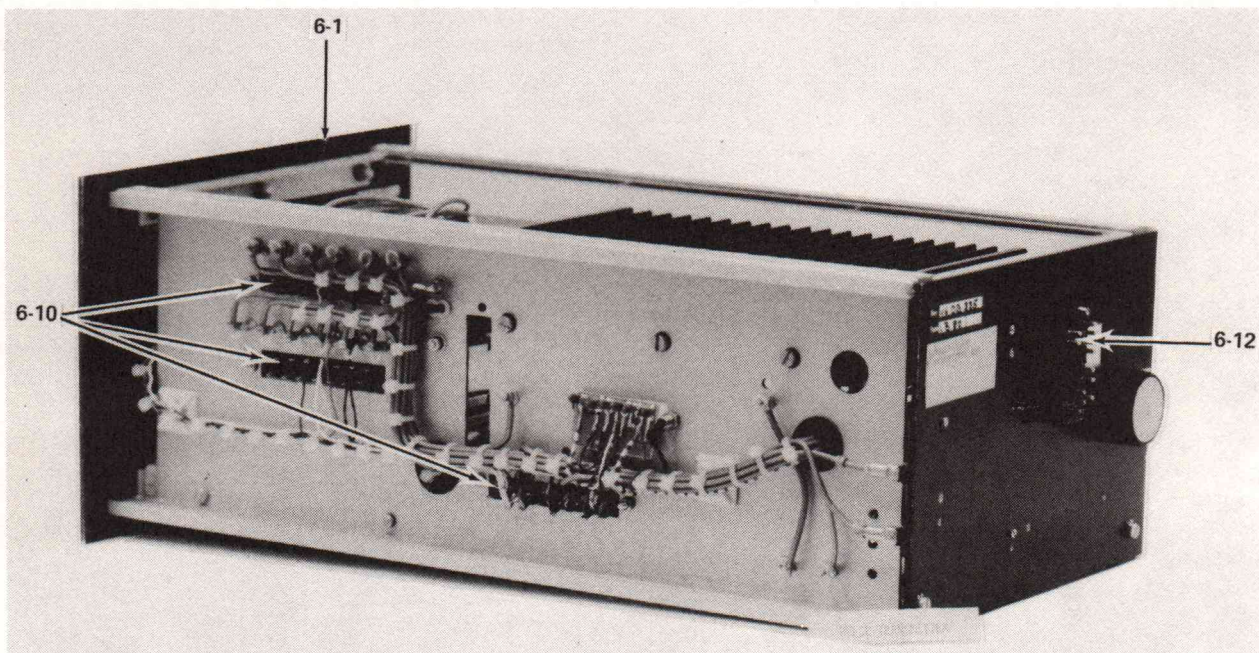


FIGURE ID AND VIEW	PART NUMER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
6-2 V2	4838493	Power Supply and Control (PCB)	1	Bruker	131605
6-3 V2	8680607	Amplifier 4-37 (PCB)	1	Bruker	
6-4 V2	4838494	Preamp (PCB) w/Heatsink	1	Bruker	131607
6-5 V2	4838495	Voltage Regulator (PCB)	1	Bruker	131609
6-6 V2	8679882	Directional Coupler	1	Bruker	
6-8 V2	8680606	Mixing Unit 1	1	Bruker	
6-9 V2	4838497	Switch (PCB) Fixed Variable Frequency	1	Bruker	
6-11 V2	8679845	Meter-matching Load	1	Bruker	
6-13 V2	8680226	Synthesizer Plug In (X 2)	1	Bruker	
6-14 V2	4838499	Variable Attenuator	1	Telonic	0-10DB 8122 50 OHM
6-15 V2	8680597	Mixing Unit 2	1	Bruker	131618

View 19. Pulse Transmitter View 2

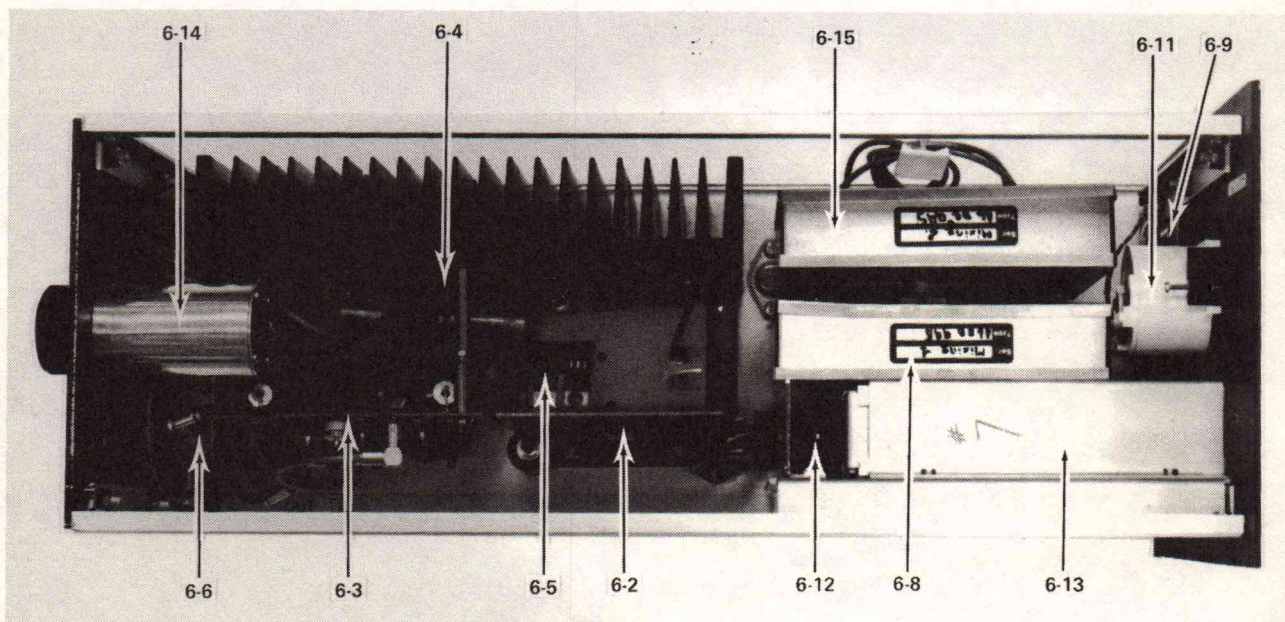


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
6-7 *	4838496	Power Transistor 2N3054	1	RCA	2N3054

2.7 DISKETTE DRIVE

FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
7-1 V1	8680175	Floppy Drive (Entire Assembly)	1	Bruker	
7-7 V1	6016821	Input Transformer, 220V	1	Bruker	
7-9 V1	E675667	Power Supply Board (PS1)	1	Bruker	350P 002
7-10 V1	E679668	Power Supply Boards (PS2)	1	Bruker	350P 003
7-12 V1	E672467	Fuse Clips	1	Wickman	
7-13 V1	48385C7	Fuse, 315mA, SB, 250V	2	Littelfuse	
7-14 V1	4838508	Fuse, 630mA, SB, 250V	1	Littelfuse	
7-17 V1	6016823	Voltage Selector Switch	1	Bruker	
7-18 V1	6016824	Connector, 9 Position Nylon Plug	1	Molex	19-09-2091
7-19 V1	E679671	Front Panel Board (PCB)	1	Bruker	350P 017
7-20 V1	6016825	Relay RB24002-V1	1		
7-21 V1	6016826	Connector, 2 Pin Nylon (on FPB)	1	Bruker	
7-37 V1	4838486	Connector, 9 Position Nylon Recept.	1	Molex	19-09-1092

View 20. Diskette Drive View 1

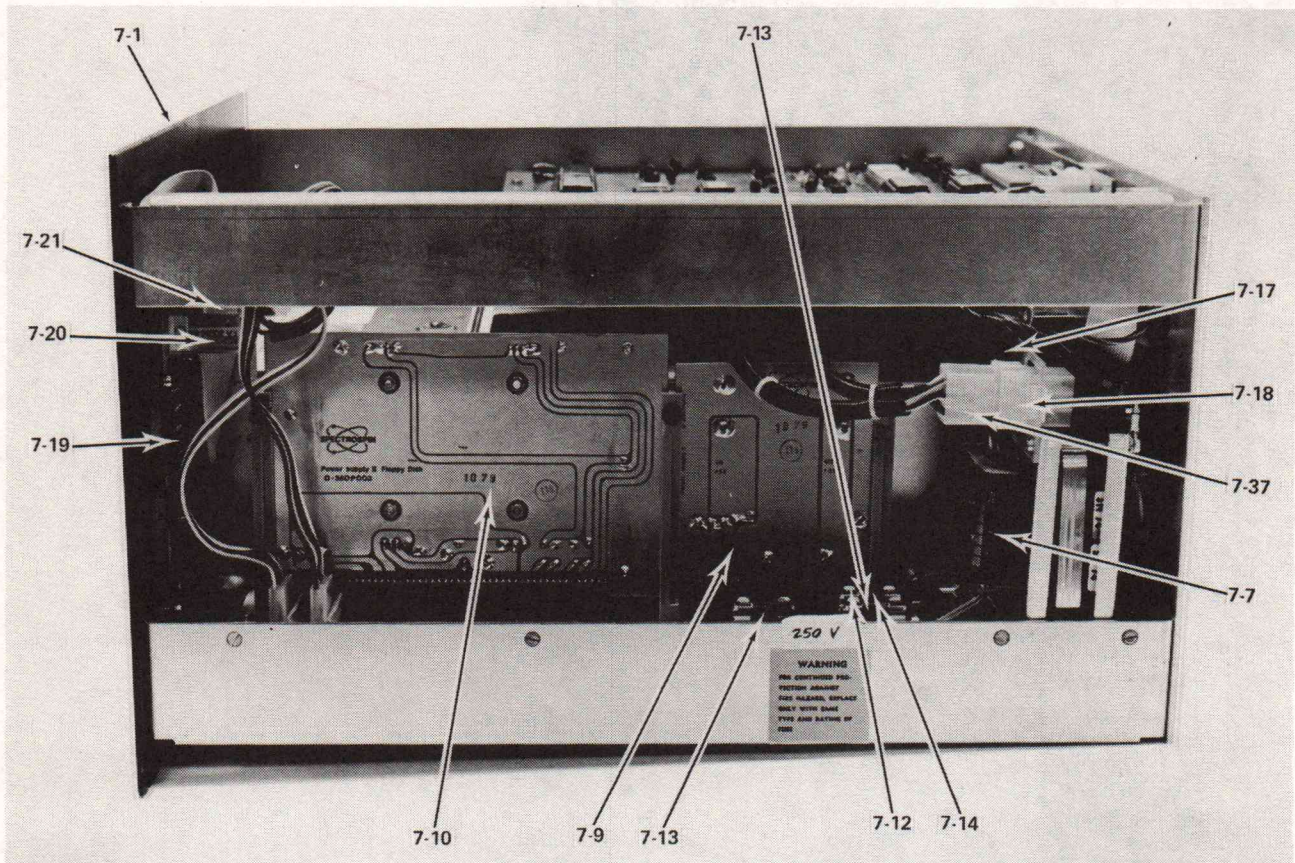


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
7-2 V2	4838500	Socket, 3 Prong 220V Male w/Fuseholders	1	Braker	350P 015
7-3 V2	8679670	Rear Panel Connector (PCB)	1	Braker	350P 012
7-4 V2	8679673	I/O Terminator (PCB)	1	Braker	
7-5 V2	8670587	Slave Terminator (PCB)	1	Braker	
7-15 V2	4838509	Fuse, 2.0A, SB, 250V	1	Littelfuse	

View 21. Diskette Drive View 2

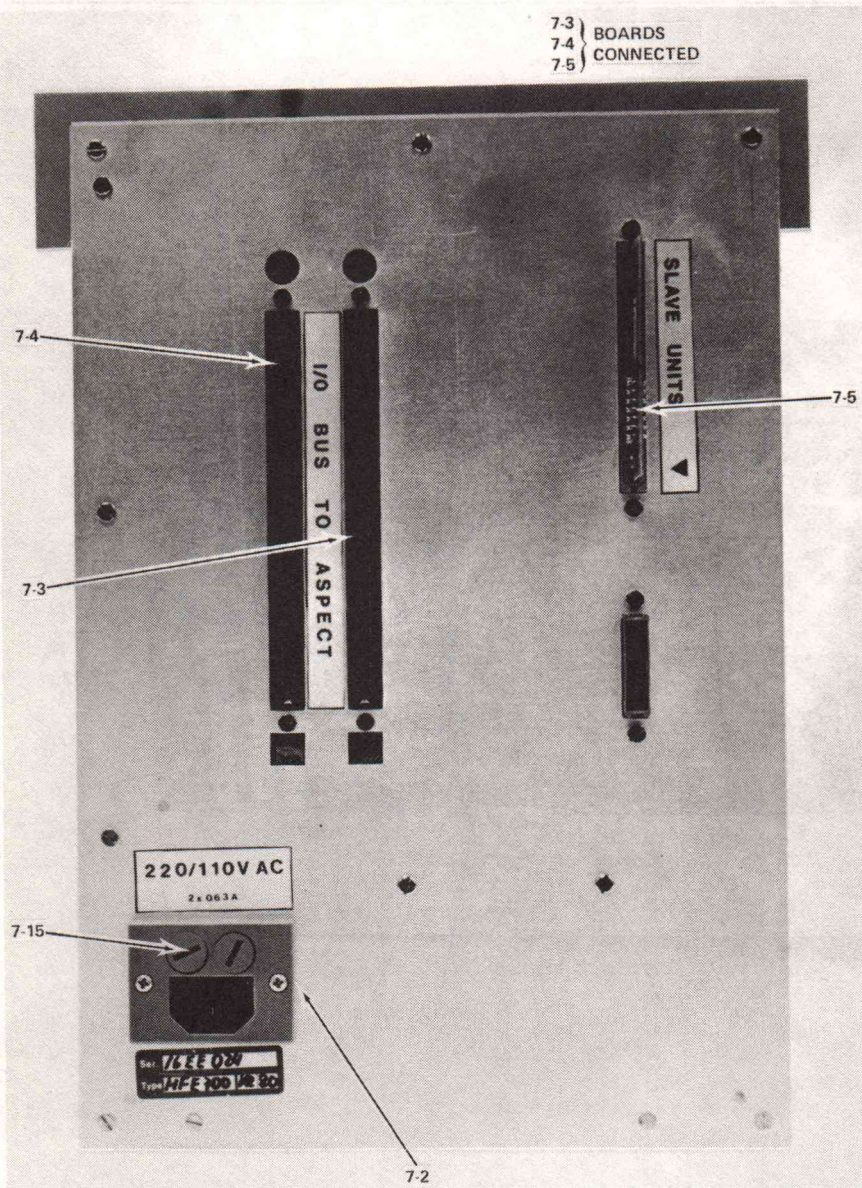


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
7-6 V3	4838504	Flat Cable, 16 Conductor w/conn.	1	Bruker	
7-8 V3	4838505	MFE Model 700 Disk Drive--c,d,e,f,h	1	MFE	350P 014
7-11 V3	8679669	Motherboard (PS3)	1	Bruker	
7-36 V3	6016838	Flat Cable, 50 Conductor, I/O	1	Bruker	
7-38 V3	8679672	Master Logic PCB	1	MFE	11155132

View 22. Diskette Drive View 3

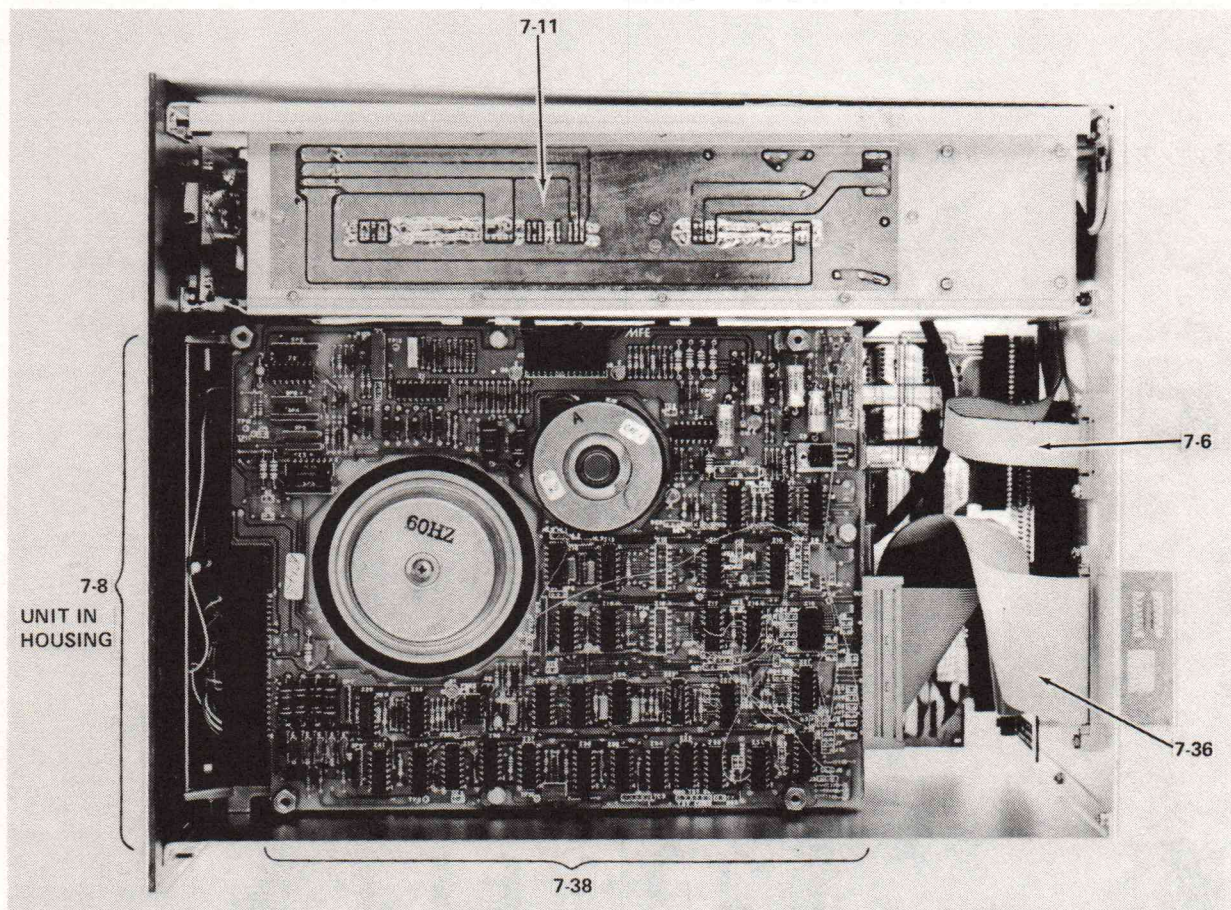


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
7-22 V4	6679666	Floppy Drive Controller Board (PCB)	1	Brucker	350P
7-23 V4	6016827	Pluggable IC NEC D372D	1	IBM	
7-24 V4	5615703	Pluggable IC 8224	1	IBM	
7-25 V4	5615704	Pluggable IC 8080A	1	IBM	
7-26 V4	6016630	Pluggable IC 8238	1	NEC	
7-27 V4	6016831	Pluggable IC 2111-1	1	Signetics	
7-28 V4	5615821	Pluggable ROM 8708	1	IBM	
7-29 V4	4178618	Pluggable IC 8212	2	IBM	
7-30 V4	1582553	Pluggable IC 7438oc	1	IBM	
7-31 V4	4433229	Pluggable IC 74126	1	TI	
7-32 V4	2392102	Pluggable IC 7404	1	IBM	
7-33 V4	2392161	Pluggable IC 7406	2	IBM	
7-34 V4	6016836	Pluggable IC Terminator Module	1	Bourns	4114R-003-221-331

View 23. Diskette Drive View 4

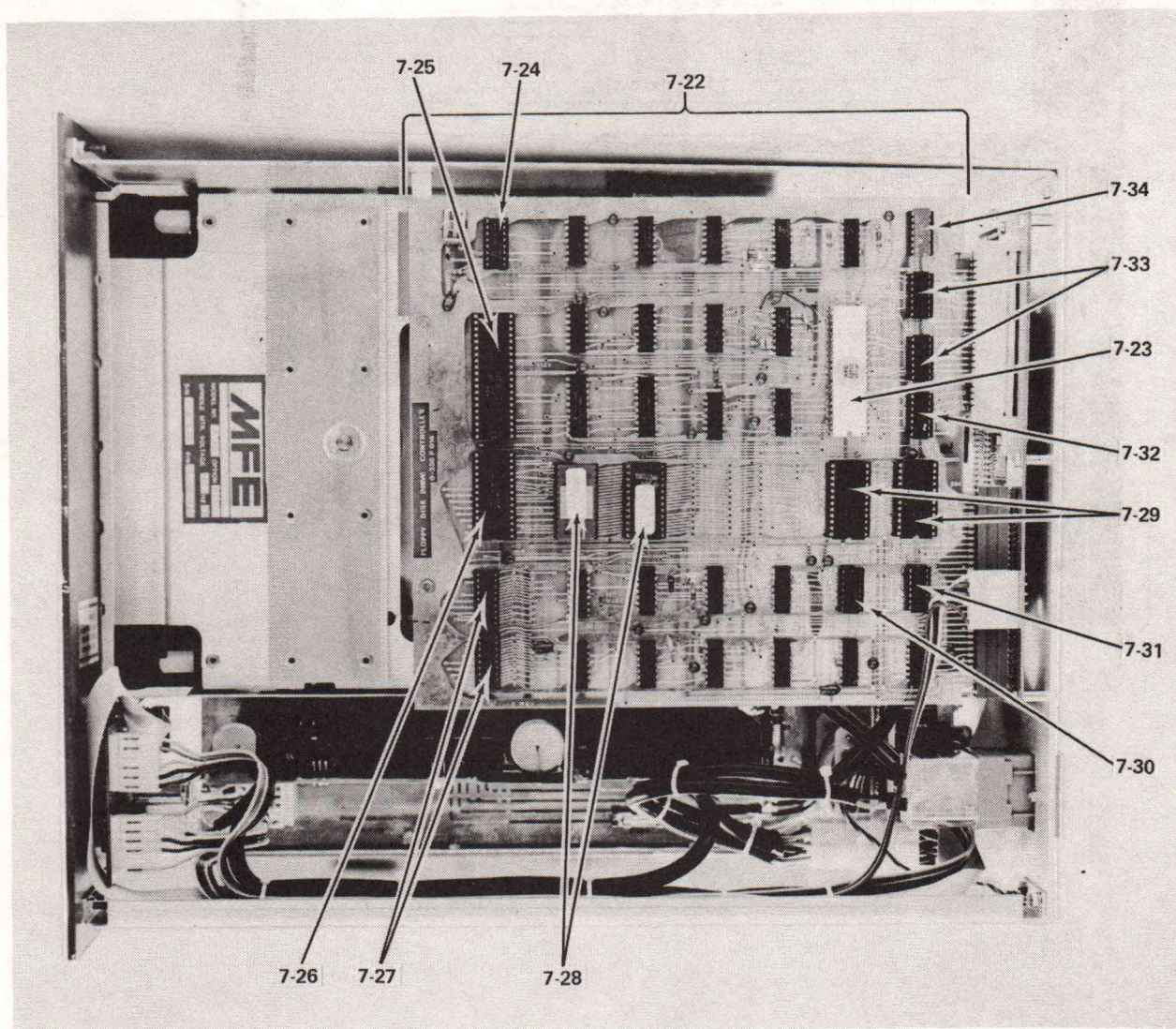
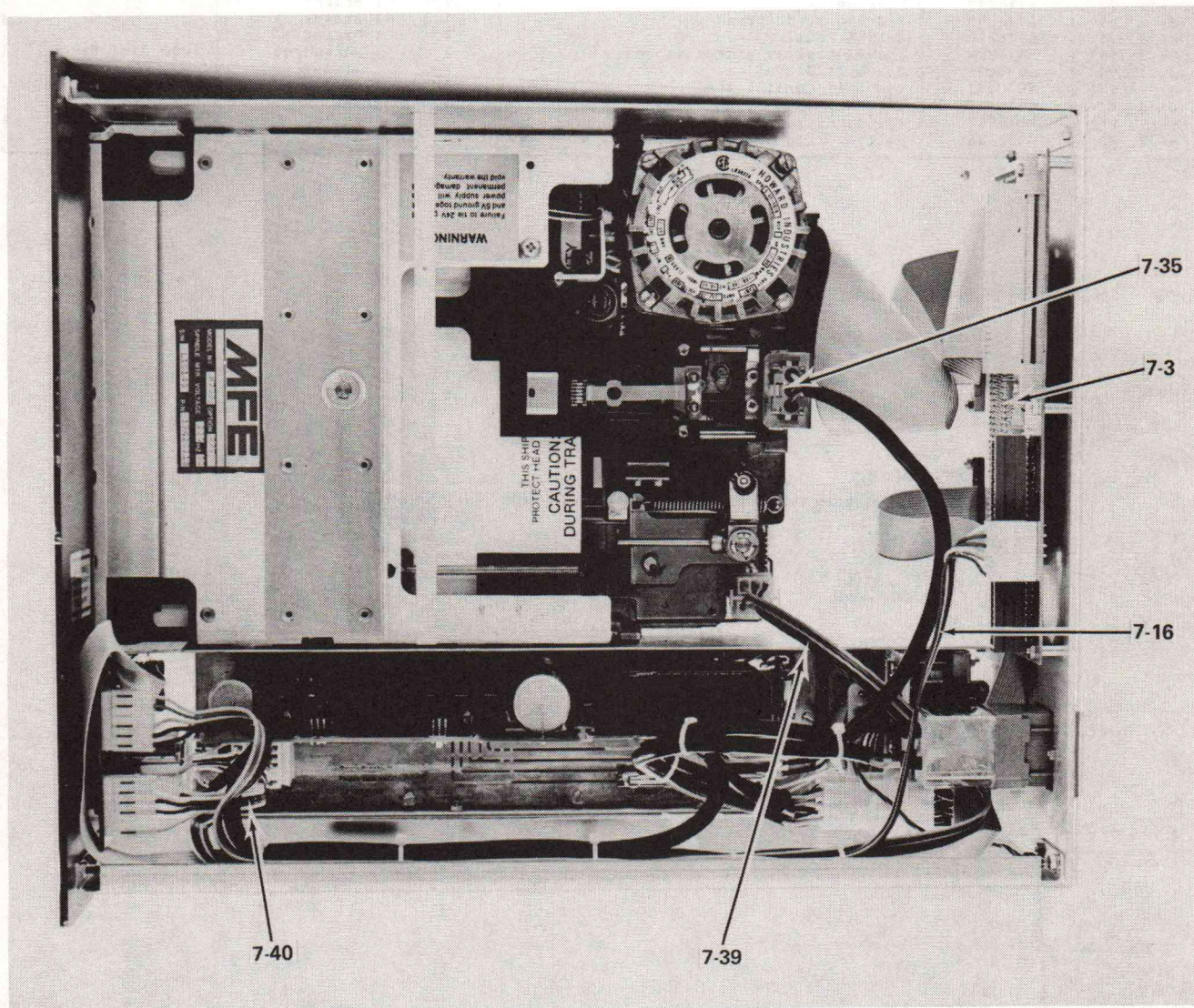


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
7-16 V5	6016822	Voltage Cable, 5 Conductor (55CM)	1	Bruker	
7-35 V5	1847536	Connector, 3 Pin Power to MFE Drive	1	Bruker	
7-39 V5	4838498	5 Conductor Cable (68CM)	1	Bruker	
7-40 V5	4838502	5 Conductor Cable (22CM)	1	Bruker	

View 24. Diskette Drive View 5



2.8 X-Y RECORDER

FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
8-1 V1	4838501	X-Y Recorder (Entire Assembly)	1	Bruker	RE 30/37A
8-3 V1	4838475	Vernier Dials (For Pots)	2	Beckman*	2606 Duo Dial
8-5 V1	5670286	Pen Lift Switch (toggle--DTSP)	1	Knitter	MST206N
8-6 V1	8679716	Fan On/Off Toggle Switch (Red)	1	Marquardt	1505-1102
8-7 V1	8679715	Power On/Off Toggle Switch (Yellow)	1	Marquardt	1505-1107
8-17 V1	6016845	Y-Drive Pulley	1	Bruker	
8-18 V2	6016847	Y-Rubber Drive Ring Clutch)	1	Bruker	
8-19 V1	6016848	Y-Drive Cord	1	Bruker	
8-20 V1	6016849	Y-Drive Cord Spring	1	Bruker	
8-21 V1	6016850	Y-Idler Pulley	1	Bruker	
8-22 V1	5670284	Travel Limiter Microswitches	2	Marquardt	1000 0101 Micro
8-23 V1	6016851	Pen Lift Magnet	1	Bruker	
8-24 V1	6016852	Pen Lift Control Arm	1	Bruker	
8-33 V1	6016856	Ball Bearings (Rear Rail)	1	RMB	ULZ307.X
8-35 V1	8680580	Pen Carriage	1	Bruker	
8-37 V1	6016828	Ball Bearing (Front Rail)	1	RMB	ULZ511X

View 25. X-Y Recorder View 1

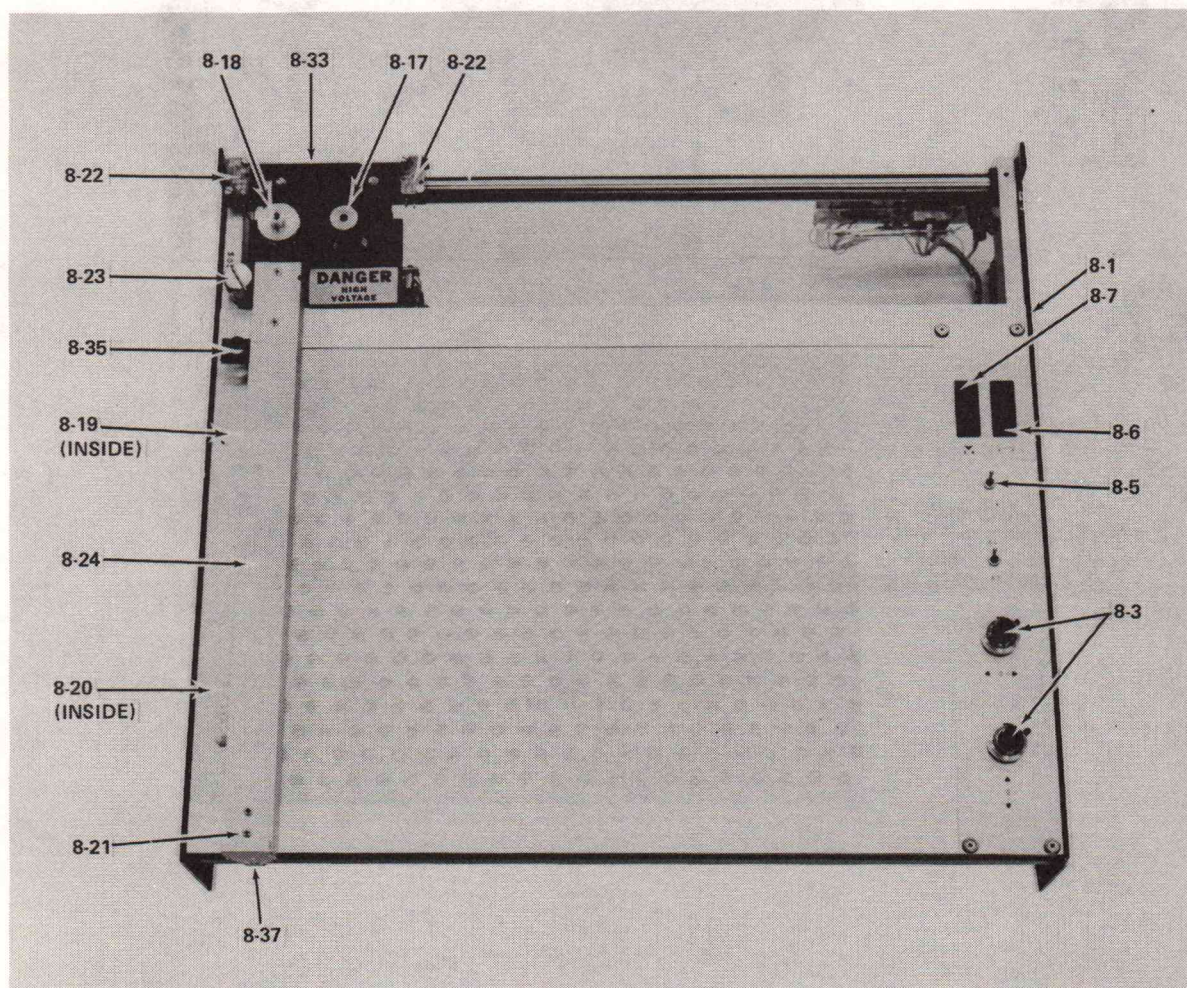
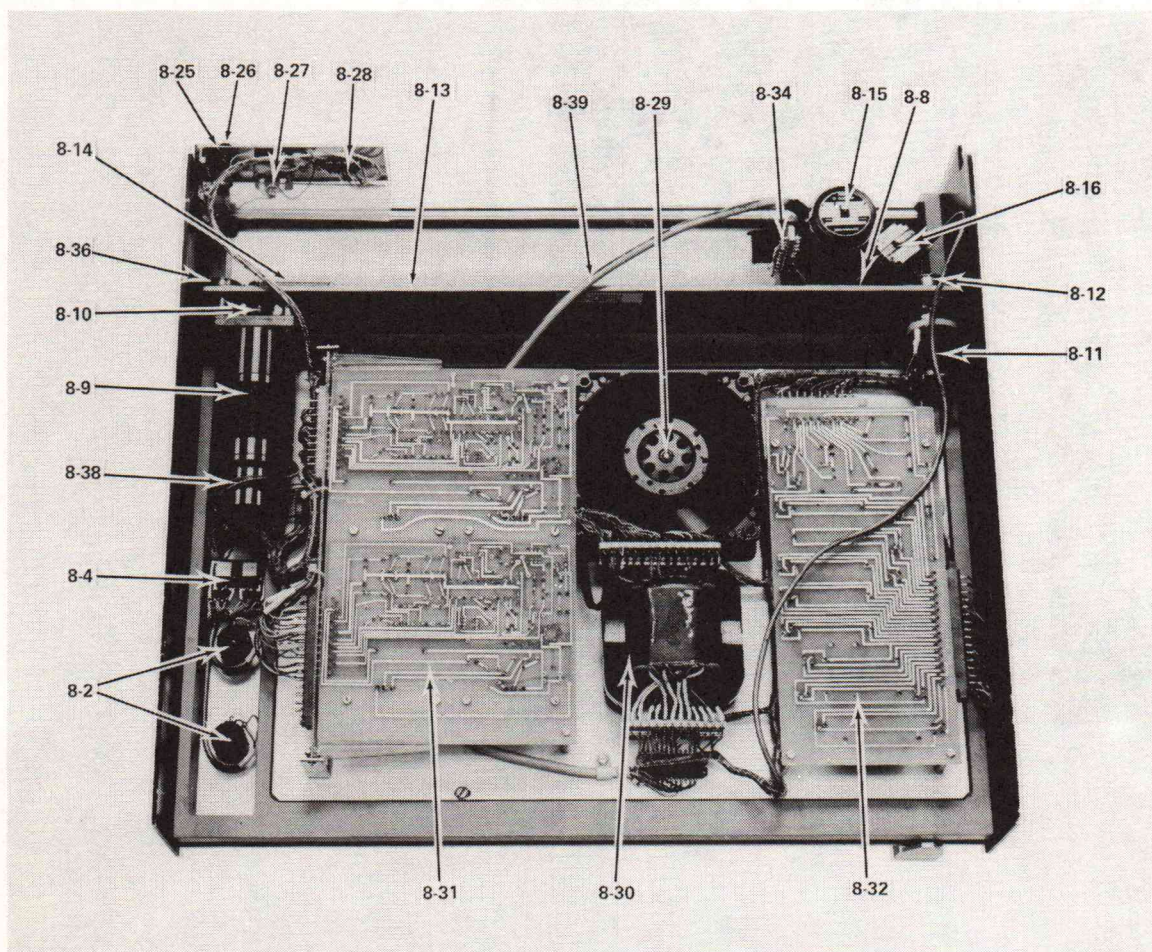


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
8-2 V2	4838463	Offset Pots, 3540s, 10-Turn	2	Amphenol	P2151B
8-4 V2	5670285	Papersize A3/A4 (PCB)	1	Bruker	
8-8 V2	6016839	Mylar Capacitor, 0.1 uF 1000V	1		
8-9 V2	5670280	X-Drive Servomotor Asm.	1	Mag.Elek. GMBH	2800T 1:10DET23G
8-10 V2	6016840	X-Drive Pulley	1	Bruker	
8-11 V2	6016844	X-Drive Potentiometer Pulley (Pos. Ref.)	1	Bruker	
8-12 V2	6016841	X-Idler Pulley	1	Bruker	
8-13 V2	6016842	X-Drive Cord	1	Bruker	
8-14 V2	6016843	X-Drive Cord Spring	1	Bruker	
8-15 V2	5670281	Y-Drive Servomotor Asm.	1	Mag.Elek. GMBH	2800T DZT23G
8-16 V2	6016846	Y-Drive Potentiometer Pulley (Pos. Ref.)	1	Bruker	
8-25 V2	5670310	Fuseholder, AC Input (Screw-In)	1	Wickman	SIL 032.1112
8-26 V2	6016853	Fuse, 1.25A, SB, 250V	1		
8-27 V2	6016829	Socket, 3 Prong Input AC, 220V	1	Sautter	Europa Norm STP40A1
8-28 V2	6016854	Socket, 15 Pin Cannon (Signal)	1	Cannon	DA15S
8-29 V2	4812461	220V Fan	1	IBM	
8-30 V2	5670282	Transformer, AC	1	Bruker	
8-31 V2	5670278	X-Y Amplifier (PCB)	1	Bruker	
8-32 V2	5670279	Power Supply and Phase Shifter (PCB)	1	Bruker	
8-34 V1	6016857	Connector, 12 Pin (For Servomotor)	1	SURIAU	8145-11-213-020VP, 8145-11-213-010-501
8-36 V1	6016825	X-Rubber Drive Ring (Clutch)	1	Bruker	
8-38 V2	8689795	X-Drive Cable	1	Bruker	
8-39 V2	8689796	Y-Drive Cable	1	Bruker	

View 26. X-Y Recorder View 2



2.9 MAIN STABILIZER AND MAGNET POWER

FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
9-1 V1	5670295	Flux Stabilizer (PCB)	1	Brucker	12135
9-2 V1	5670294	Integrator (PCB)	1	Brucker	12225
9-3 V1	5670293	Current Stabilizer (PCB)	1	Brucker	
9-4 V1	5670292	Rectifier (PCB)	1	Brucker	
9-5 V1	5670291	Shim Add (PCB)	1	Brucker	
9-6 V1	5670290	Shim A & B) (PCB)	1	Brucker	
9-7 V1	5670289	Warning Unit (PCB)	1	Brucker	
9-14 V1	6016862	Socket, 3 Pin (Soldered to Small Bd.)	1	Brucker	
9-16 V1	6016864	Fabric Covered Hose	Q		
9-46 V1	6016881	Fan	1	ETRI	113X N

View 27. Main Stabilizer and Magnet Power View 1

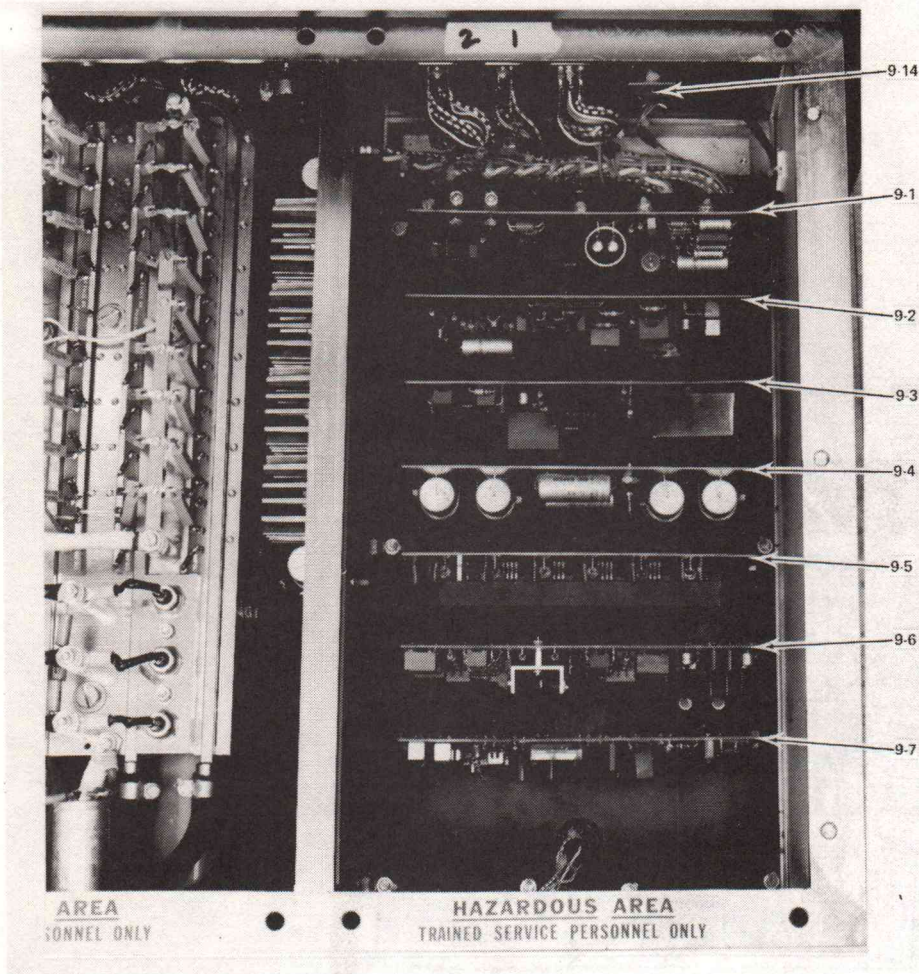


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
9-11 V2	6016859	Socket, 30 Pin	1	Amphenol	T2070-030
9-12 V2	6016860	Socket, 26 Pin	1	Amphenol	T2057-026
9-13 V2	6016861	Socket, 39 Pin	1	Amphenol	T207-050
9-50 V2	5670310	Fuseholders	2	Wickman	Sil 032.1112
9-51 V2	8679736	Fuse, 4A MDX (American)	2		
9-54 V2	6016886	Water Hose Inlet/Outlet Conn.	2	Bruker	
9-55 V2	6016888	Socket, Probe Motor Ctrl. 4 Pin	1	Amphenol	T3111 000
9-58 V2	4838449	Socket, 5 Pin Power w/Cover	1		
9-59 V2	6016891	Power Connector Thumb Lugs	3	Ruhstat	REF138-100Amp

View 28. Main Stabilizer and Magnet Power View 2

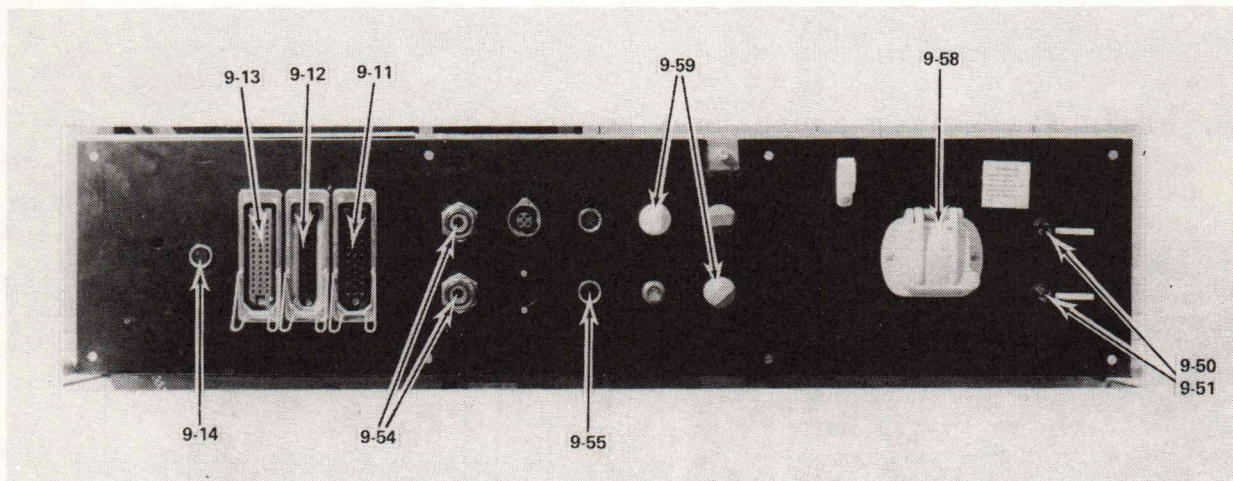


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
9-15 V3	6679653	Shim Prestabilizer (PCB)	1	Bruker	
9-18 V3	6016666	Resistor, .15 Ohm, 10W	36	TRW	
9-19 V3	814146	Resistor, 22 Ohm, 0.5W	36	IBM	
9-20 V3	2391667	Power Transistor 2N3716	36	IBM	
9-33 V3	6016675	Thermal Switches Typ161	2	InterControl	70
9-34 V3	6016676	Cold Plate (Passbank)	1	Bruker	
9-35 V3	5670303	Electrolytic Cap, 10 uF 180/250V	1	Eurofarad	PP120
9-36 V3	5670302	Electrolytic Cap, 4700 uF 150/180V	2	Eurofarad	ETH-V
9-39 V3	6016677	Main Transformer	1	Bruker	
9-42 V3	8680555	Fuse, .2A, SB, 250V	2	Littelfuse	
9-43 V3	8679743	Fuse, .1 A, FB, 250V	4	Littelfuse	
9-47 V3	6016683	Terminal Strip, 4 Position (Screw)	1	Weidmueller	AL-1
9-48 V3	6016682	Terminal Strip, 32 Position (Solder)	1	Weidmueller	AK-24
9-49 V3	6016684	Terminal Strip, 18 Position	1		
9-52 V3	5670306	Transformer, Electronic	1	Bruker	

View 29. Main Stabilizer and Magnet Power View 3

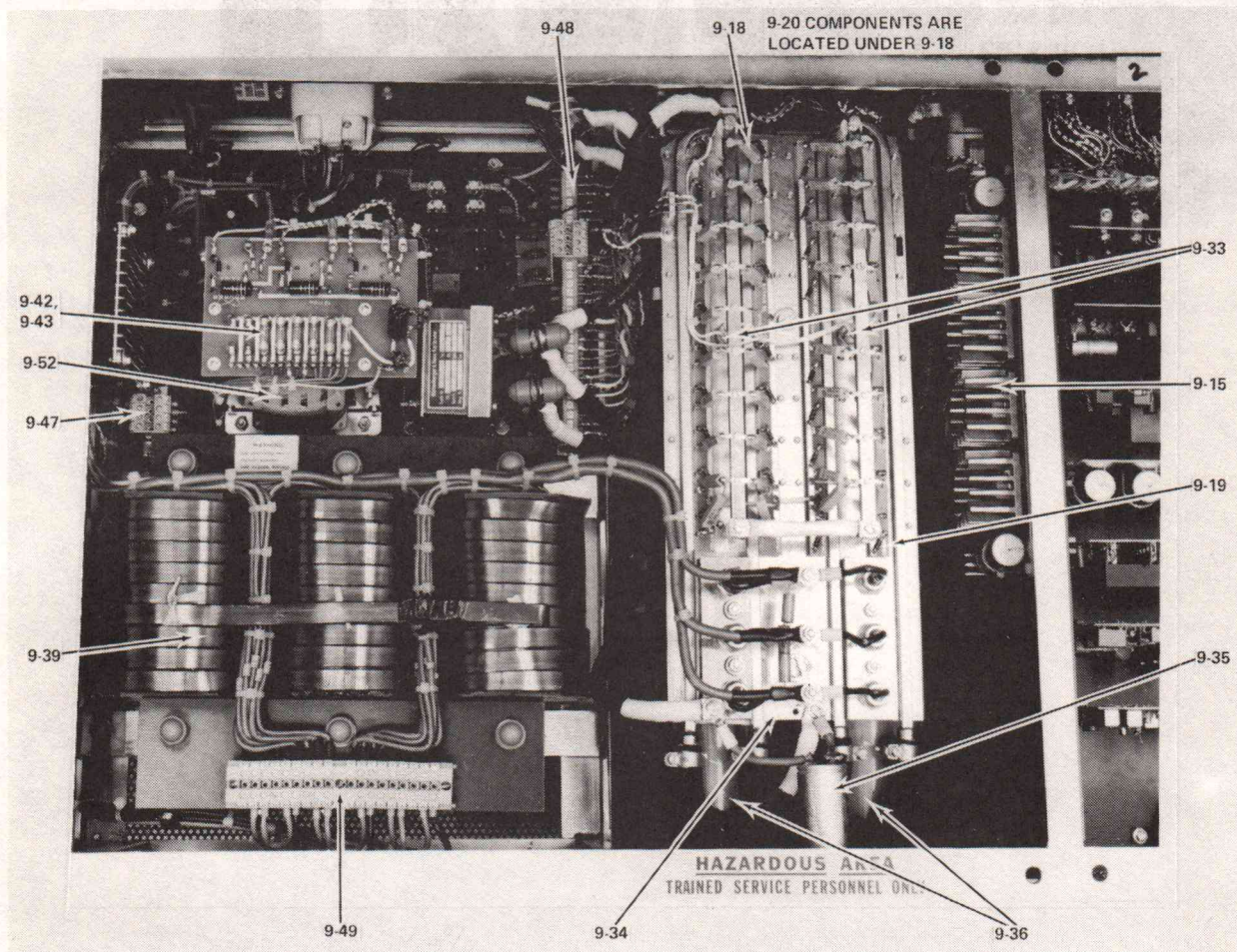


FIGURE ID AND VIEW	PART NUMEER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
9-17 V4	6016865	Rubber Water Hoses	Q	ARGUS	DVM DN8
9-38 V4	5670307	Self Chcke	1	Bruker	
9-40 V4	5670304	Contactior, 5 Pole 220V	1	Siemens	3TB 4217-0A
9-41 V4	8680236	Motor Cntrl (PCB)	1	Bruker	
9-45 V4	6016880	Delta Y Selector Switch	1	Baco	25A600V PR25

View 30. Main Stabilizer and Magnet Power View 4

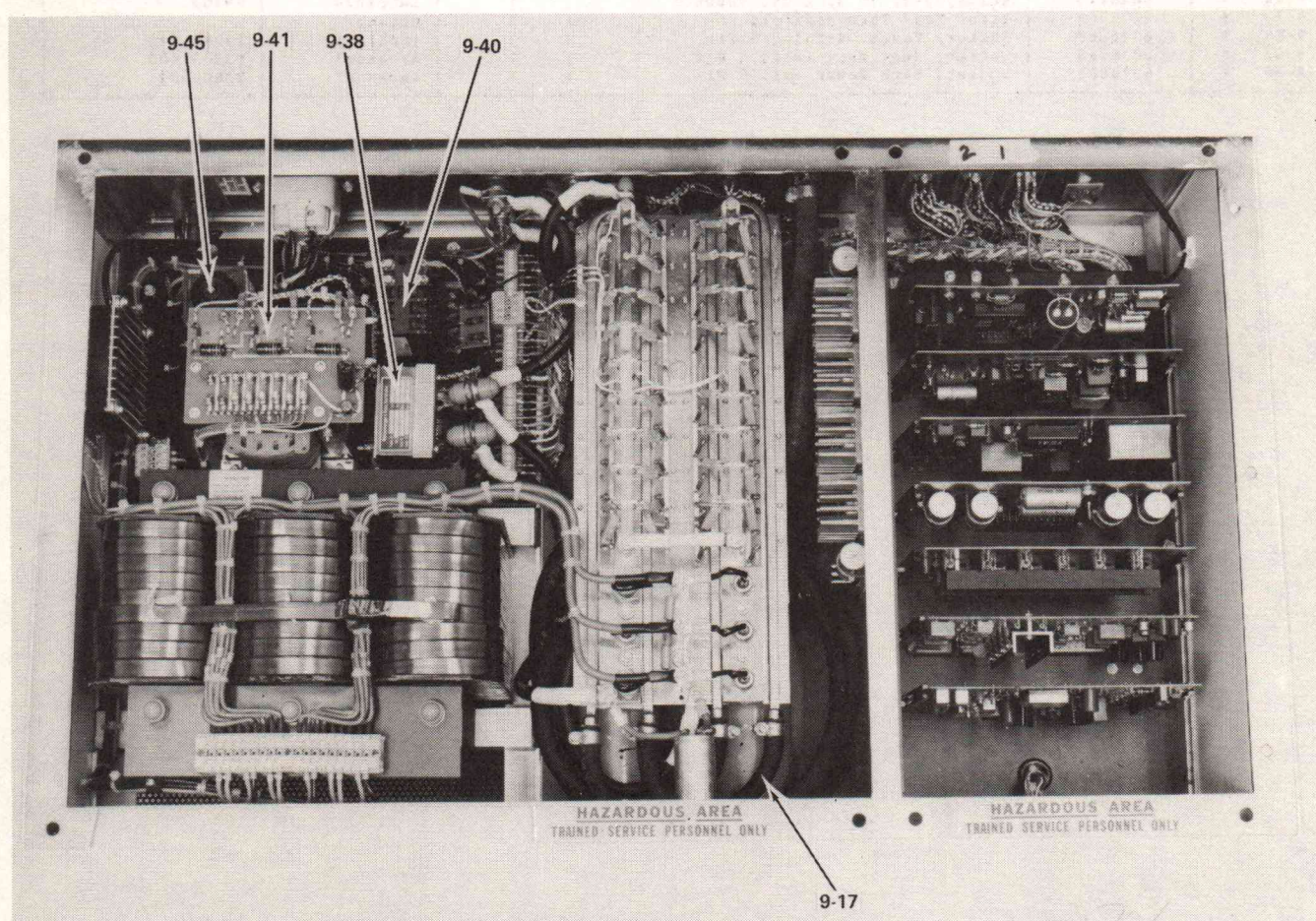


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
9-8 *	4838462	Socket, 31 Position For PCBs		Kaco	KG31-031J4
9-9 *	8686237	VCE Meter	1	Bertram	621.116 J Glace D2
9-10 *	6016858	Voltage Test (PCB)	1	Bruker	
9-21 *	5252662	Power Transistor 2N3055	4	IBM	
9-22 *	2396628	Transistor MJ2500		IBM	
9-23 *	2396629	Transistor MJ3000		IBM	
9-24 *	5252662	Transistor 2N5683		TI	
9-25 *	6016868	Silicone Diode IN4003	36	IBM	
9-26 *	6016892	ZL47 Diode	1	Intermetall	
9-27 *	6016870	Power Diode SKN 50/04	3	SEMICON	
9-28 *	6016869	Power Diode SKR 45/04	3	SEMICON	
9-29 *	6016871	Capacitor, .22 uF 400V	3	Sprague	715P-22454MD3
9-30 *	6016872	Resistor, 5.6K Ohm, 0.5W	Ohmite	RC20-5600	
9-31 *	317390	Resistor, 82 Ohm, 0.5W		IBM	
9-32 *	6016874	Terminal Blk., 3 Position	1	Bruker	
9-37 *	6016878	Resistor, 270 Ohm 10W	36	Dale	270HL10
9-44 *	6016879	Relay, 24V, 10 A, 250V, VDE0660	1	LeGrande	49163
9-53 *	8679703	Water Feed Thru Manifold	1	Bruker	
9-56 *	6016889	Socket, Therm. Warning 5 Pin	1	Amphenol	T3363 000
9-57 *	6016890	Socket, Heat Exc. Intlk 4 Pin	1	Amphenol	T3303 000
9-60 *	6016863	Socket, Main Power Box, 6 Pin	1	Amphenol	T3400001

2.10 PROCESSOR

FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
10-1 V1	8679675	Processor (Entire Assembly)	1	Bruker	ASPECT 2000 IPA
10-2 V1	4433387	LEDs, Red, 3mm	17	Siemens-LLD32-2 Litronix	
10-3 V1	4433390	LEDs, Yellow, 3mm	1	Siemens-Litronix LD36-2 Litronix	
10-4 V1	4433391	LEDs, Green, 3mm	9	Siemens-Litronix LD37-2 Litronix	
10-6 V1	5670341	Pushbutton Switches, w/LEDs	8	Schadow	STL
10-7 V1	6016893	Thumb Switches	8	Cherry	L20-07A
10-8 V1	6016895	Power (Key) Switch ON/OFF	1	Lumitas	31-192.00

View 31. Processor View 1

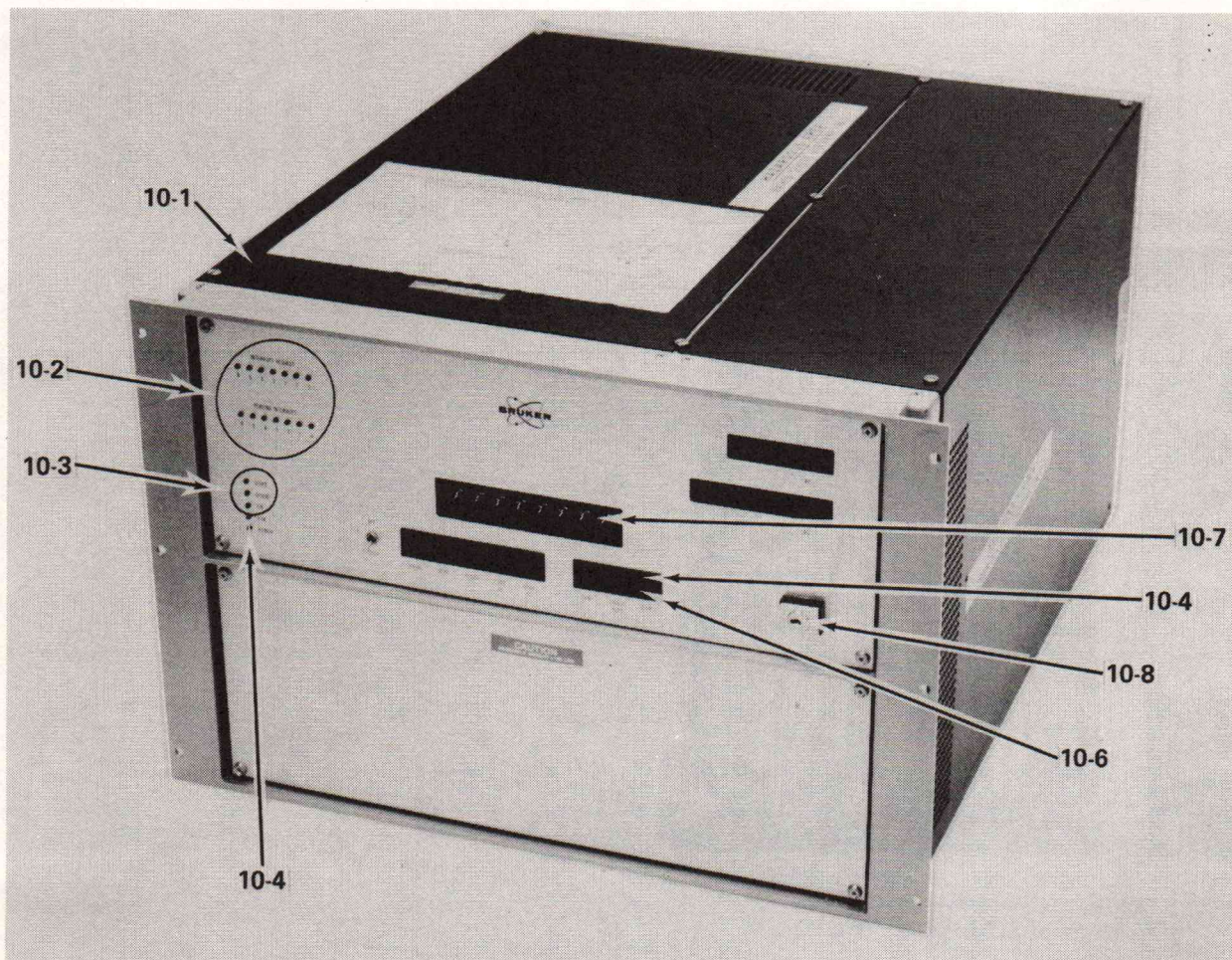


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
10-10 V2	5670335	Front Panel Board B--FPB (PCB)	1	Bruker	FPB76231
10-11 V2	5670336	Front Panel Board C--FPC (PCB)	1	Bruker	FPC76221
10-12 V2	4433201	16K Memory (PCB)	1	Bruker	76042
10-13 V2	4433202	8K Memory (PCB)	1	Bruker	76042
10-14 V2	4433214	F1-F2 Board (PCB-1)	1	Bruker	77121
10-15 V2	4433203	Memory Cntrl Board (PCB-6)	1	Bruker	76035
10-16 V2	4433204	Address Board (version-2...PCB-7)	1	Bruker	77453
10-17 V2	4433205	Register Board (PCB-8)	1	Bruker	76065
10-18 V2	4433206	Cntrl Board (PCB-9)	1	Bruker	78075
10-19 V2	4433207	Disk Interface Board (PCB-10) Mod 31	1	Bruker	76504
10-20 V2	4433208	Display Board (PCB-11)	1	Bruker	76255
10-21 V2	4433209	Sweep Cntrl Board (PCB-12)	1	Bruker	76417
10-22 V2	4433210	Digitizer Board with Slow A-D (PCB-13)	1	Bruker	77433
10-23 V2	4433212	WP Pulser Board (PCB-13a)	1	Bruker	77174
10-24 V2	4433213	I/O Interface Board (vers.2...PCB-14)	1	Bruker	78243
10-25 V2	4433217	Panel Adapter Board-IP (PCB-15)	1	Bruker	77344

View 32. Processor View 2

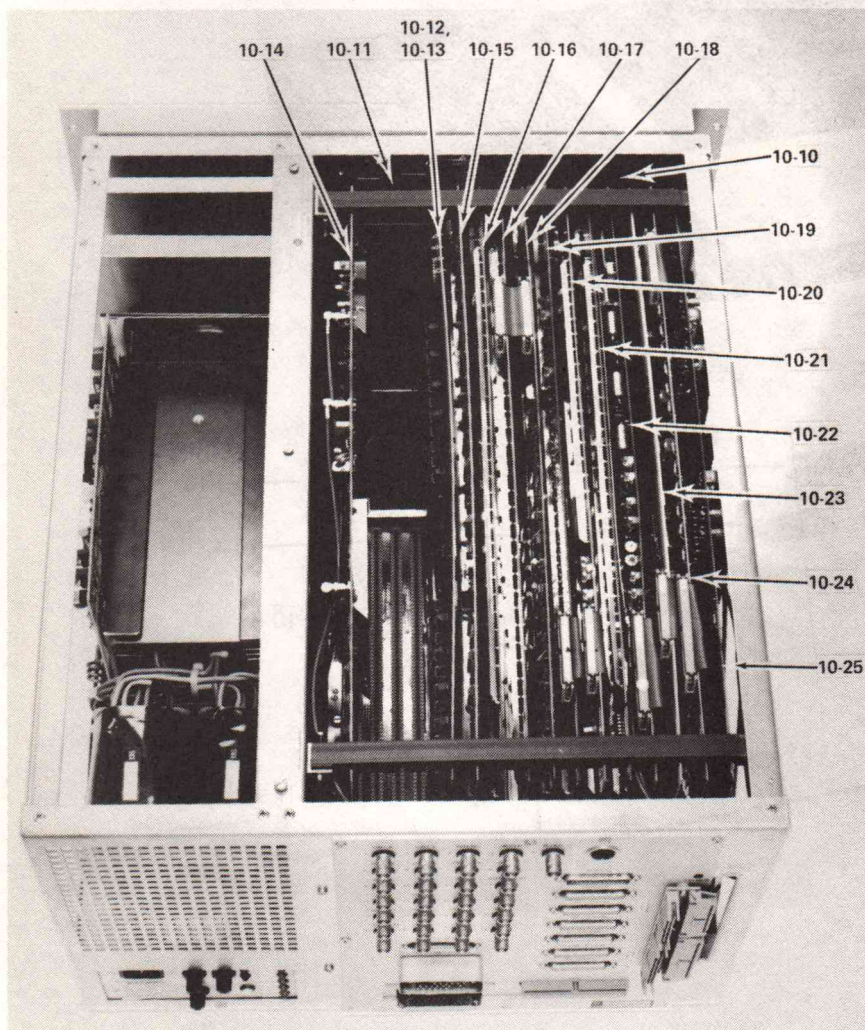


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
10-28 V3	6016899	Teletype Board (TTY)	1	Bruker	
10-29 V3	6016898	Flat Cable, 50 Conductor (to FPC)	1	Bruker	
10-30 V3	6016902	Flat Cable, 34 Conductor Jumper	1	Bruker	

View 33. Processor View 3

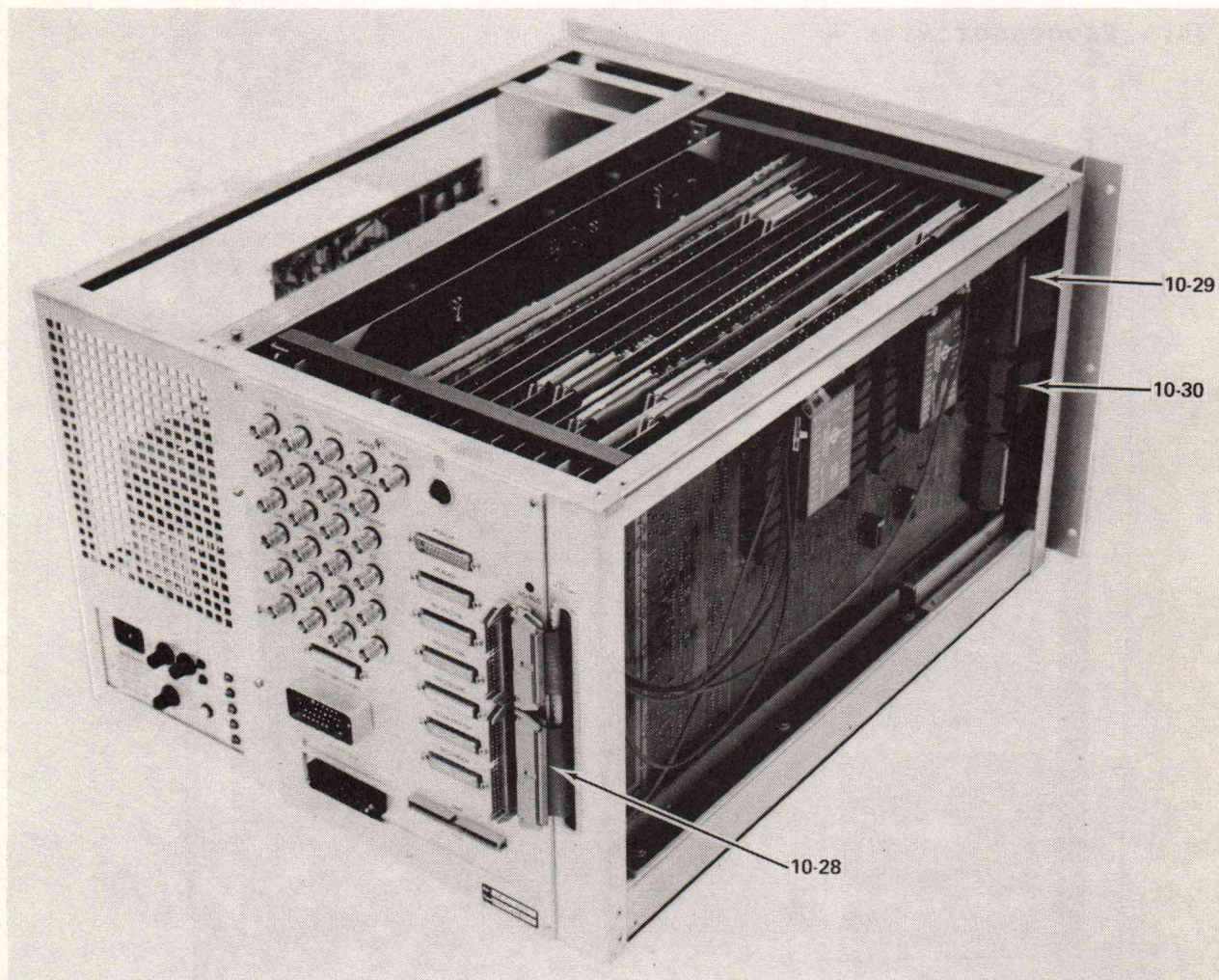


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
10-27 V4	5670340	Mother Board	1	Bruker	
10-41 V4	4109480	Fan	3	IBM	
10-47 V4	4812459	Choke 4CA	1	Electronic 51-H2-395	2KB447/004 51-H2-395

View 34. Processor View 4

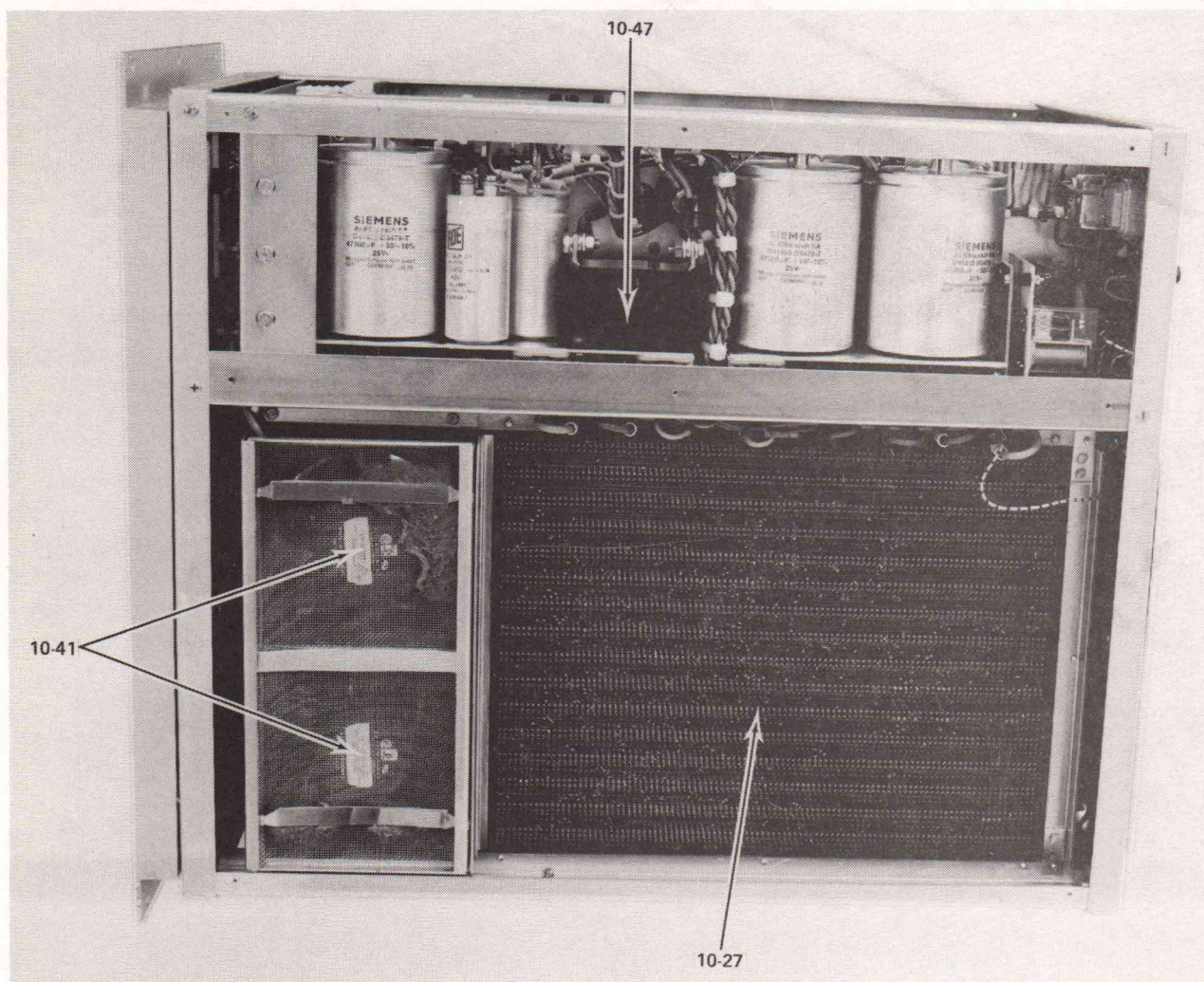


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
10-31 V5	4812468	LEDs, Green 5mm	5	RAFI Schuricht	1.10107.011-02 14331.1/19466
10-32 V5	8680579	LEDs, Red 5mm	2		
10-33 V5	4812469	Reset Switch (White)	1		
10-34 V5	8679740	Fuseholders (Screw-in)	3		
10-35 V5	8679741	Fuse, 6.3A, SB, 250V	1		
10-36 V5	8679742	Fuse, 1.0A, SB, 250V	1	Elkose	Netz Filter6H461
10-37 V5	8679743	Fuse, 100mA, FB, 250V	1		
10-39 V5	4812466	Socket Plug, 220V 3 Prong Male w/filt.	1		

View 35. Processor View 5

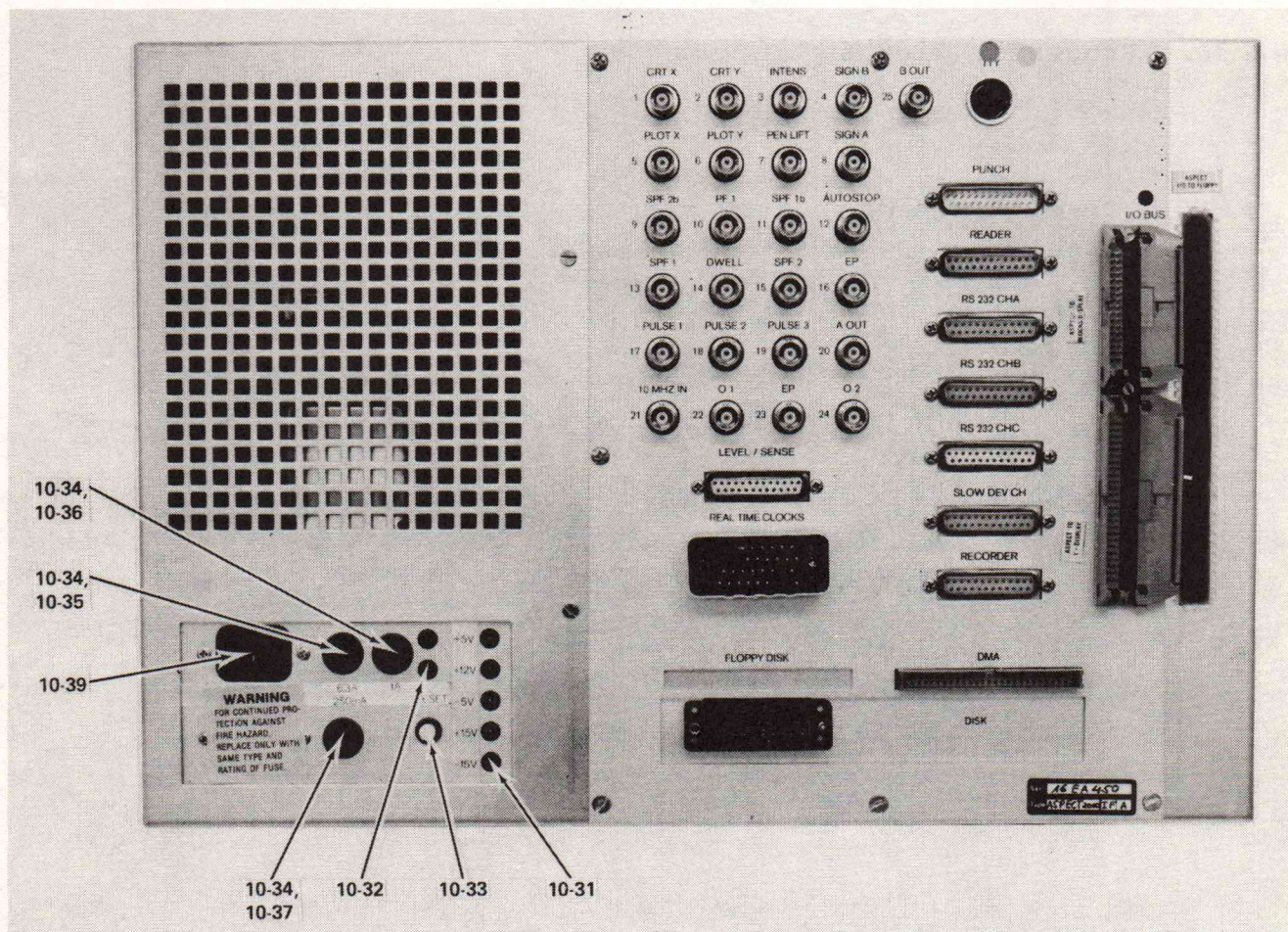


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
10-38 V6	4838039	Relay/Transformer Board	1	Bruker	
10-42 V6	4812462	Electrolytic Cap, 47K uF +50/-10% @ 25V	3	Eurofarad	
10-43 V6	4812463	Electrolytic Cap, 10K uF +50/-10% @ 25V	1	Eurofarad	
10-44 V6	4812464	Electrolytic Cap, 10K uF +50/-10% @ 40V	1	Eurofarad	
10-45 V6	4812475	Resistor, 470 Ohm, 5W, 10%, WW	1		
10-46 V6	4812474	Resistor, 1K Ohm, 5W, 10%, WW	1		
10-48 V6	4812465	Line Filter		Corcom	6EF 1
10-51 V6	4812476	Terminal, 6 Pin	1	Schurich	LL6KA P/N 14.495.1
10-52 V6	4812477	Terminal, 3 Pin	1	Schurich	LL3KA P/N 14.495.0
10-57 V6	4812460	Main Aspect Transformer	1	Bruker	

View 36. Processor View 6

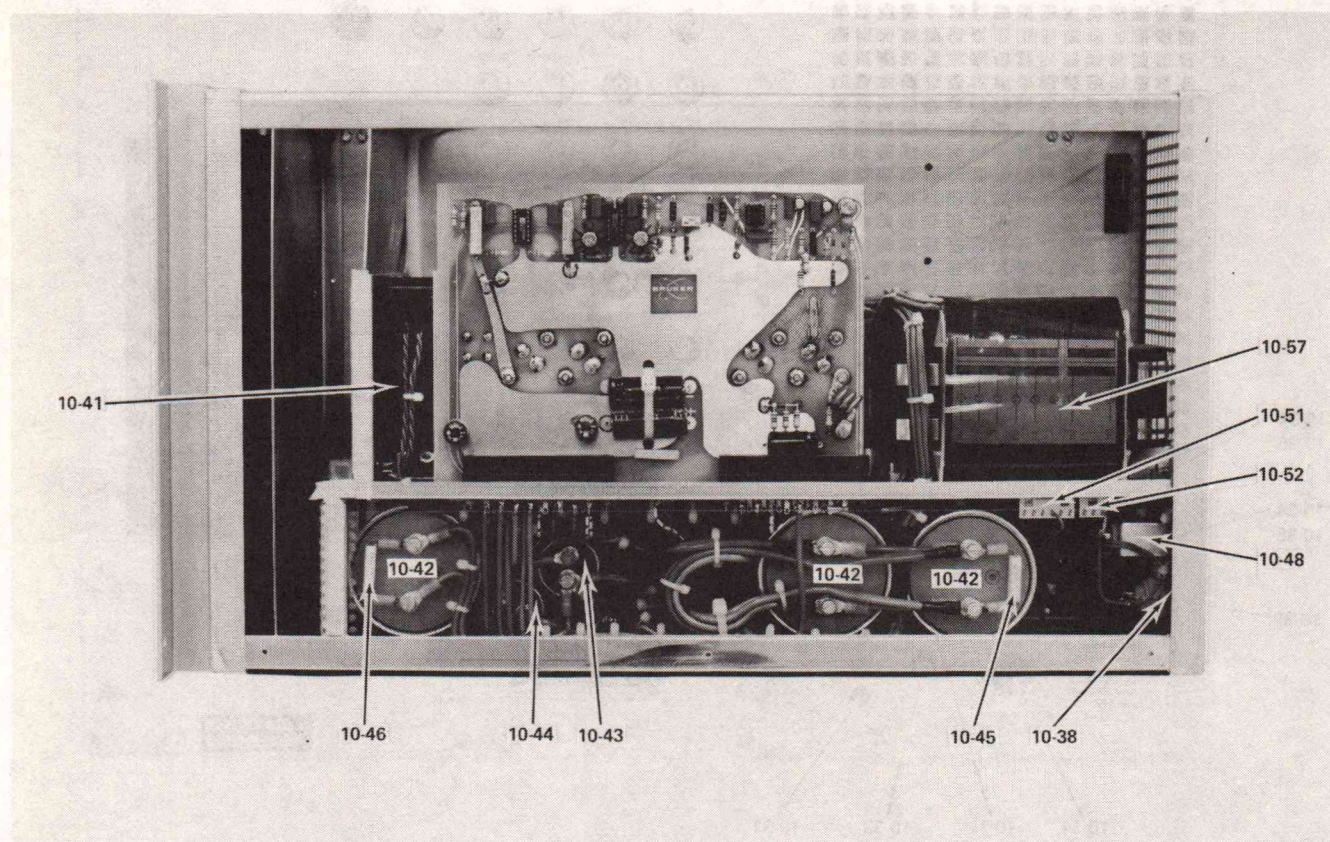


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
10-9 V7	5670334	Front Panel Board A--FPA (PCB)	1	Bruker	FPA76257
10-26 V7	6016901	Plastic PC Board Dividers	2	Bruker	
10-50 V7	8680571	Diode IN4148	2		
10-54 V7	8680575	Connector, 15 Pin Female	4	Roschi	R102-3005
10-55 V7	4431549	Power Supply Board 1	1	Bruker	
10-56 V7	4431550	Power Supply Board 2	1	Bruker	
10-58 V7	8680560	Fuse, .5A, FB, 250V			

View 37. Processor View 7

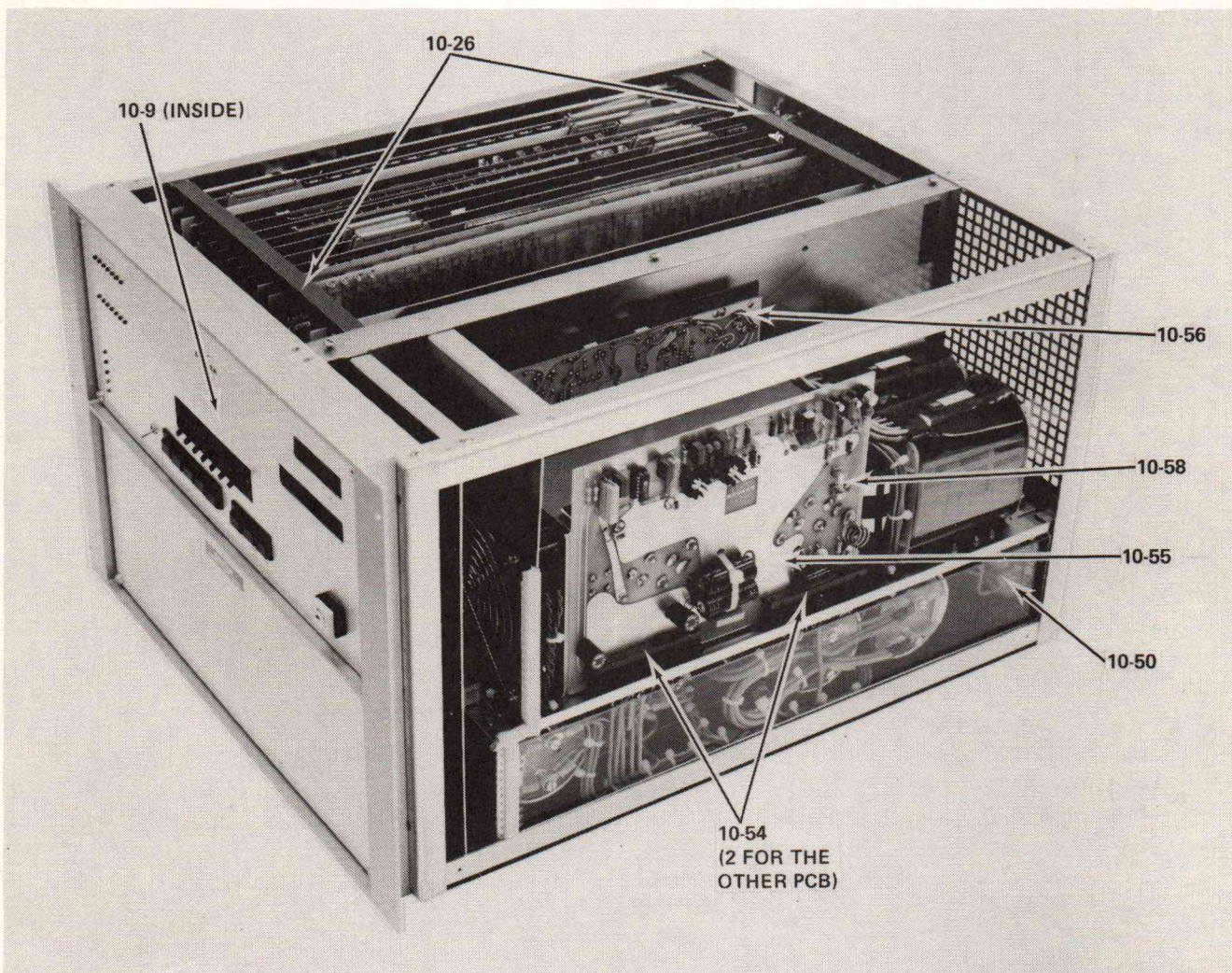


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
10-5 *	6016894	On/Step Toggle Switch (DTSP)	1	Knitter	7101
10-40 *	4812466	Socket Plug, 220V 3 Prong Female	1	Ettinger	European 1216518
10-49 *	4812458	Diode SSIT 2340	4	SEMICON	SKR71/16
10-53 *	8680574	Line cord	1	Sautter	H05VV-F3G1,0 QMH 3M
10-59 *	8680555	Fuse, .2A, SB, 250V	1		
10-60 *	8680557	Fuse, 1A, FB, 250V			
10-61 *	8679976	Module, 16K RAM		Nationa Semi	MM5290J-3
10-62 *	8679718	16K Mem (PCB) Ver II		Bruker	
10-63 *	8679719	32K Mem (PCB) Ver II		Bruker	
10-64 *	8679721	48K Mem (PCB) Ver II		Bruker	
10-65 *	8679722	64K Mem (PCB) Ver II		Bruker	
10-62 *	8679735	80K Mem (PCB) Ver II		Bruker	

2.11 MAGNET ASSEMBLY

FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
11-2 V1	8679724	Air Control Valve	1	Bruker	
11-3 V1	8679725	Air Control Gauge	1	Bruker	
11-4 V1	6016906	Sample Depth Gauge	1	Bruker	
11-5 V1	8680593	Up/Down Control (PCB)	1	Bruker	
11-6 V1	8679727	Magnet Pushbutton	1	Bruker	
11-7 V1	8679726	Magnet Switch (PCB)	1	Bruker	
11-8 V1	6016907	Potentiometers, 10-Turn, 10K, Drift	1	Bruker	
11-9 V1	8679731	Potentiometers, 10-Turn, 1 K, Current	2	Bruker	
11-10 V1	4433387	LEDs, Red 3mm			
11-11 V1	6016908	Top Cover Hinge Dampers	4	Bruker	
11-26 V1	5670330	Probe Arm Limiter Micro Switches	2	Matsushita	AH7150591
11-29 V1	8680342	Air Supply Tubing		Bruker	8MM ID/7MM OD
11-30 V1	4812444	Line Power Pushbutton, Red	1	Schadow	
11-32 V1	8679728	Reset Pushbutton	1	Schadow	
11-33 V1	6016925	Flux Pushbutton	1	Schadow	

View 38. Magnet Assembly View 1

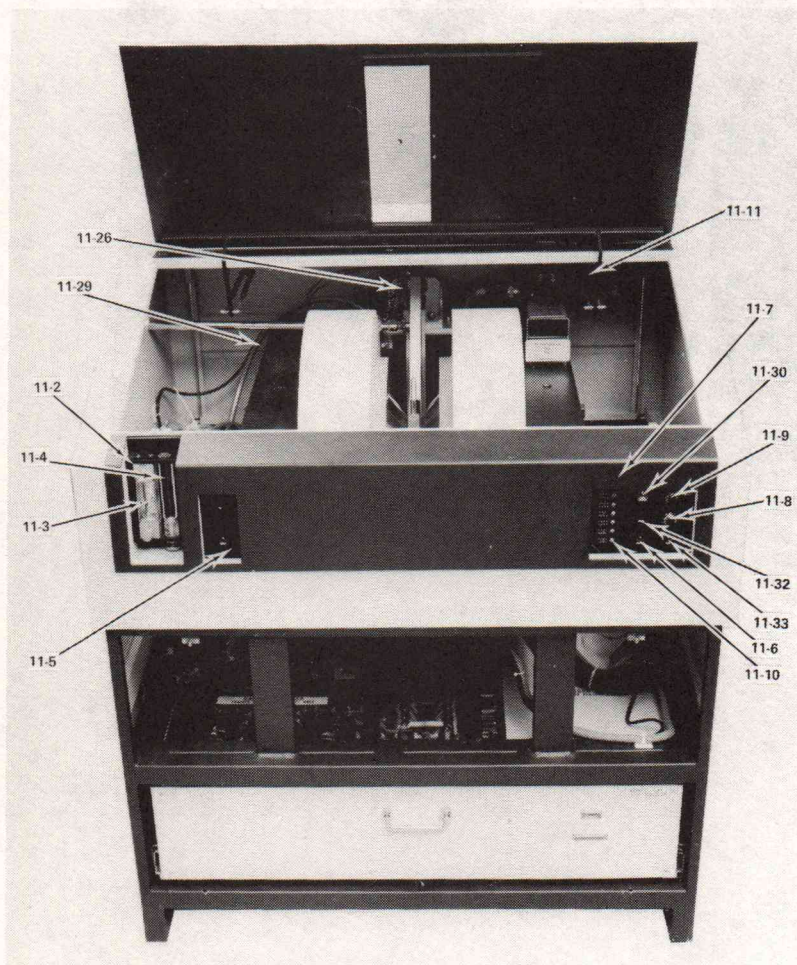


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
11-1 V2	6016919	Water In/Cut "O" Rings ()	1	Efrapo	20mmx3mm

View 39. Magnet Assembly View 2

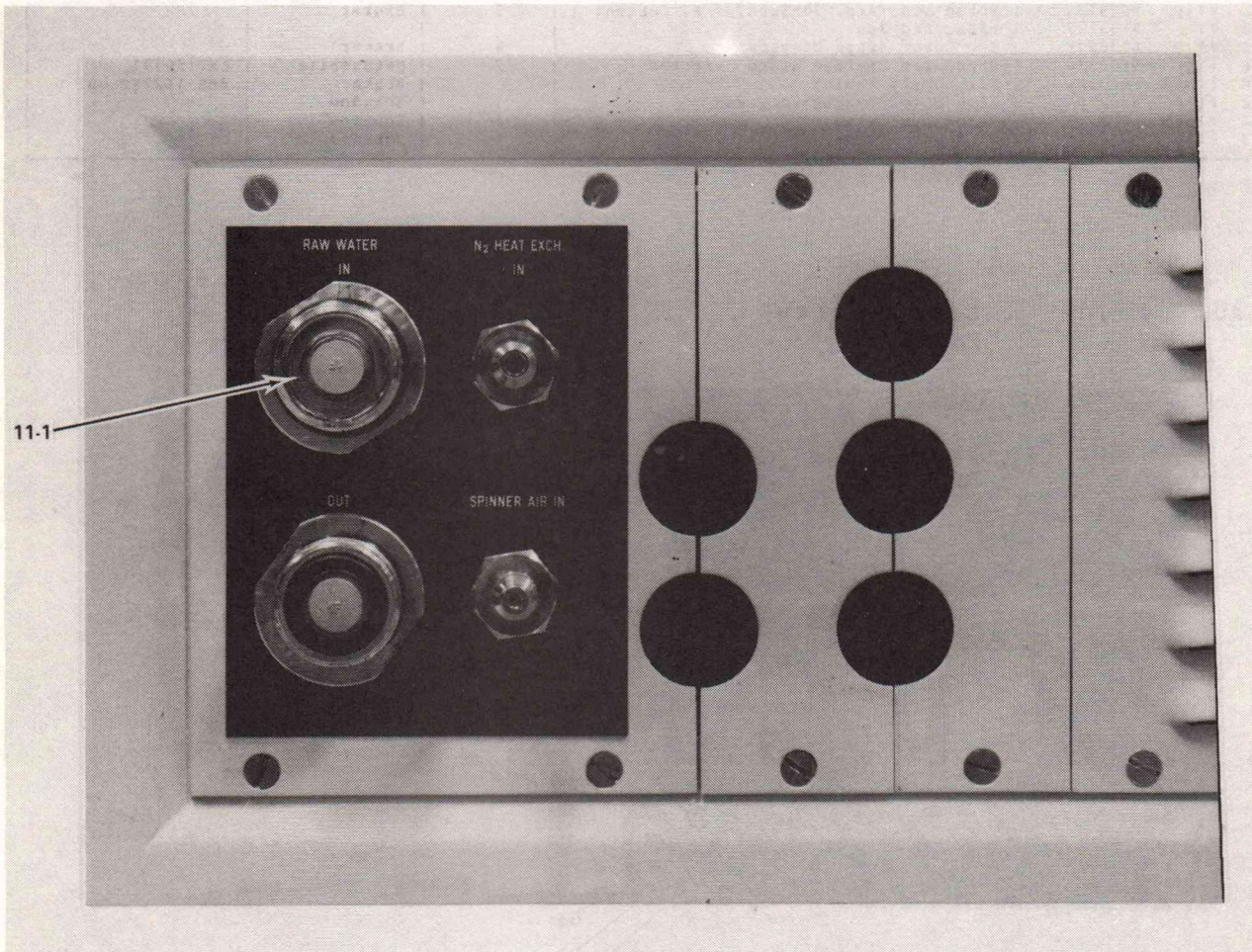


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
11-12 V3	6016909	Selector Switch, 220V/380V	1	Baco	2253 D4
11-13 V3	5670310	Fuseholders	2	Wickman	Sil 032.1112
11-14 V3	6016911	CB1 (Main Line) 25A	3	Kloekner*	FAZG25-4
11-15 V3	6016912	CB2 (Power) 20A	1	Kloekner*	FAZG20-3
11-16 V3	6016913	CB3 (Console) 5A	1	Kloekner*	FAZG05-3
11-17 V3	6016914	CB4 (Heat Exchanger) 5A	1	Kloekner*	FAZG05-2
11-18 V3	6016915	Contacter, Mainline	1	Telemecanique	LC1D404
11-19 V3	5670305	Transformer 12V--24V	1	LeGrande	LG49163
11-20 V3	8680594	Relay Board (FCB)	1	Bruker	
11-28 V3	4388452	Connector, Burndy 19 Pin Round	1	Bruker	

View 40. Magnet Assembly View 3

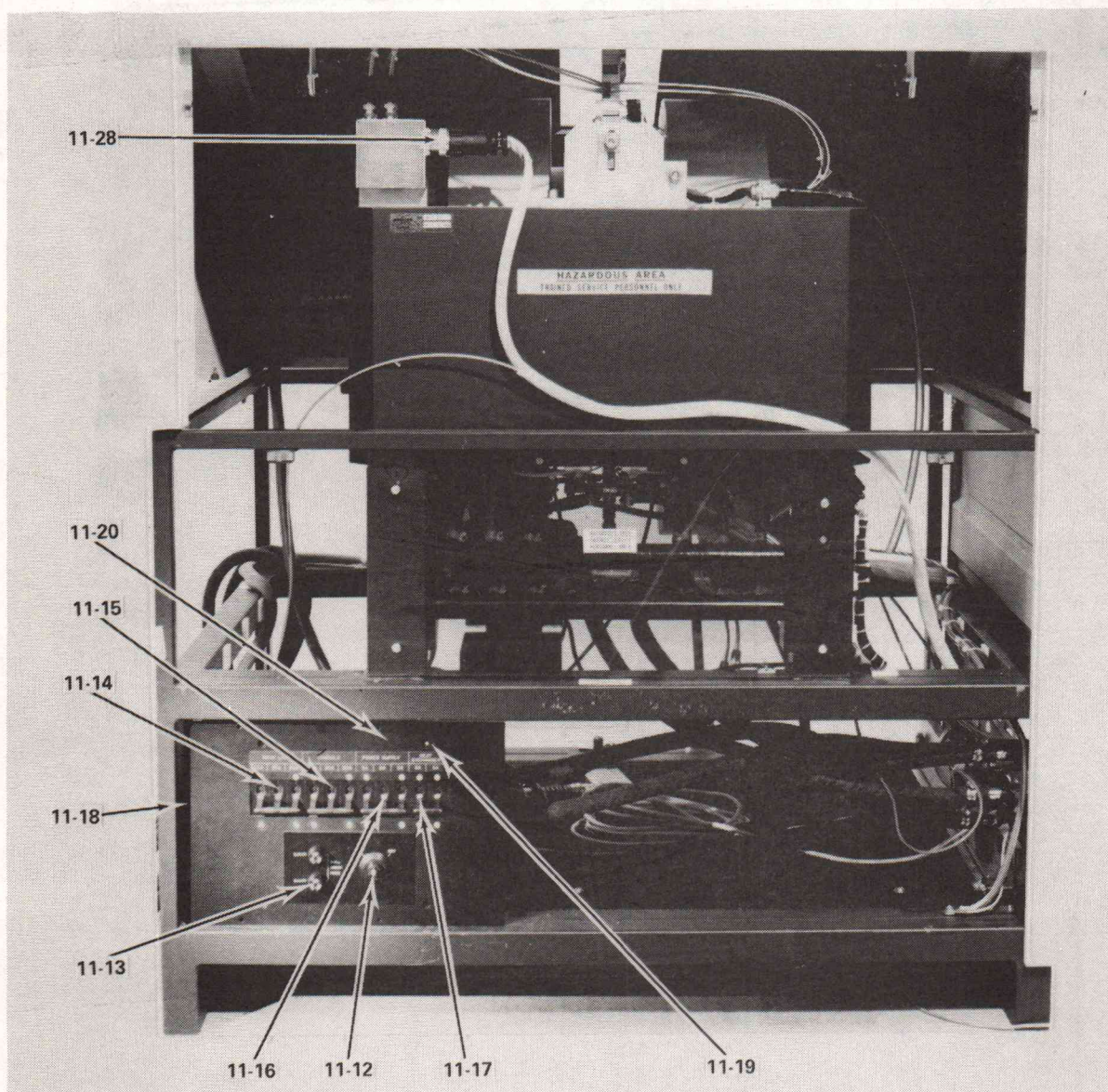


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
11-21 V4	5670329	Probe Arm Drive Motor	1	Bruno Maedler	Type B, Size 71A
11-25 V4	6016922	Thermal Switch (Bottom of Magnet)	2	InterControl	43C

View 41. Magnet Assembly View 4

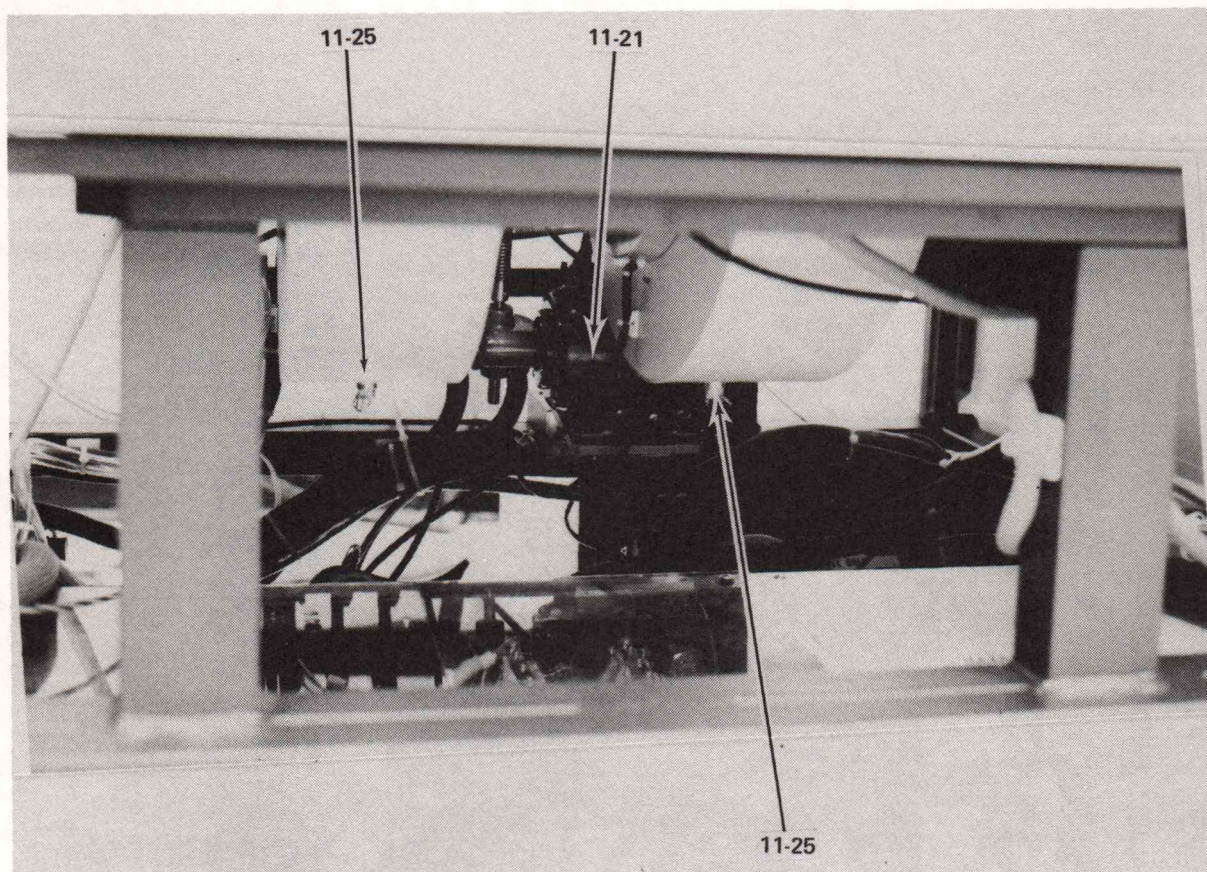


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
11-22 *	6016916	Terminal Strip, 3 Position	1	Bruker	
11-23 *	6016917	Terminal Strip, 9 Position	1	Bruker	
11-24 *	6016918	Capacitor, 10 uF 240V/260V	1	Bosch	0670 311 464
11-27 *	6016920	Probe Arm Travel Adjusting Blocks	1	Bruker	
11-31 *	5670301	Shim Condenser (Capacitor)	1		
11-34 *	8680173	Temp Sensor, Cooling Water	1	Sopac	1402 (Type PS)
11-35 *	4212444	Line Power PB		Schadow	
11-36 *	5670331	Air Supply Tubing, 4MM ID/7MM OD		Bruker	
11-37 *	8680588	"O" Rings		Efrapo	20MMx3MM
11-38 *	8679793	Cooling Water Exhaust Outlet		Bruker	
11-39 *	4214445	Cooling Water Distr. Inlet		Bruker	

2.12 HEAT EXCHANGER

FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
12-3 V1	6016926	Capacitor (Starter) 12MFD,400Vac	1	Asea Junet	MFN5-33122
12-4 V1	8679732	Ion Exchange Column	1	Serva Zinzer	BRM2/63
12-5 V1	8679797	Ion Exchange Resin	1	Serva Zinzer	Order for above No.
12-20 V1	5670162	Input Water Filter Assembly	1	Bruker	
12-21 V1	8680589	Power Cable	1	Bruker	
12-22 V1	8680590	Control Cable	1	Bruker	

View 42. Heat Exchanger View 1

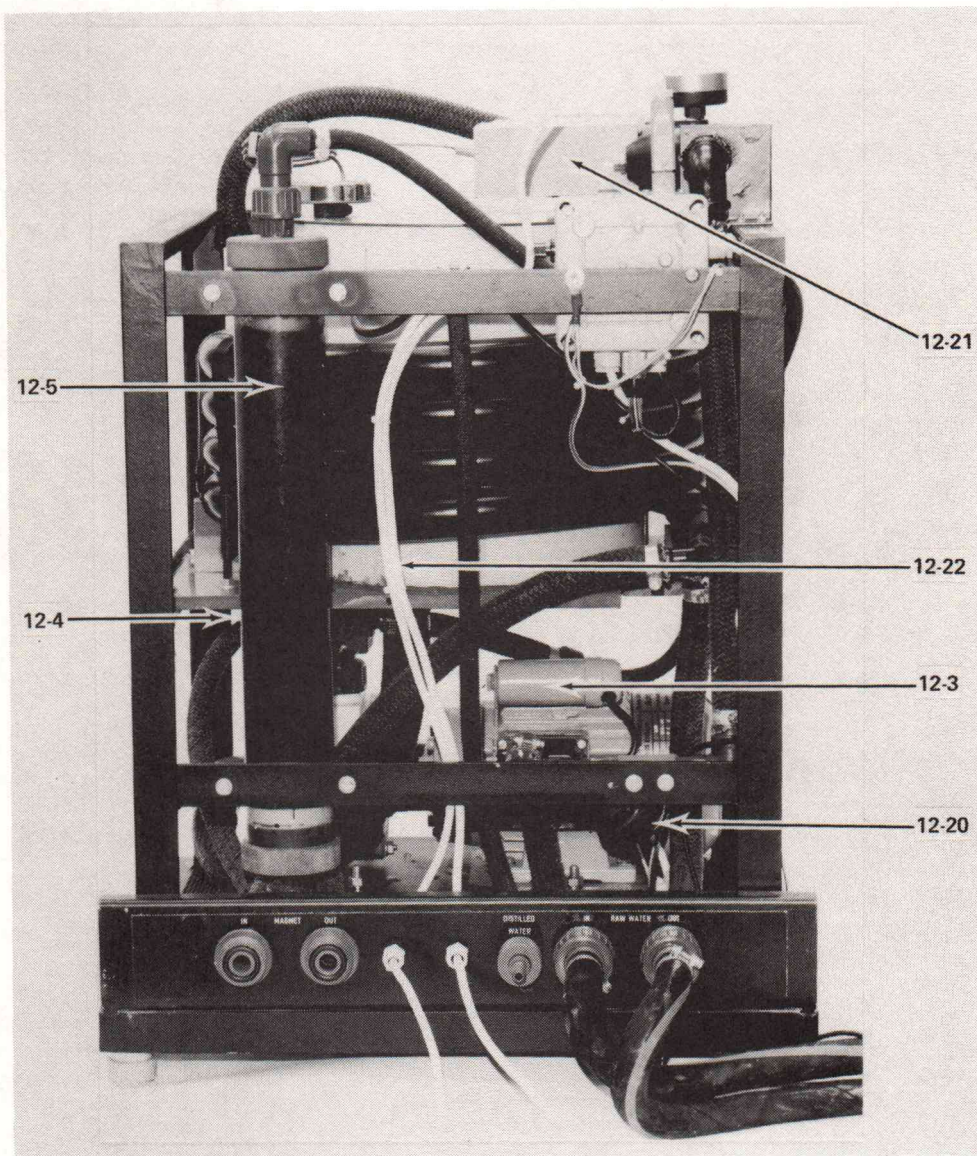


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
12-1 V2	5670167	Heat Exchanger (Entire Assembly)	1	Bruker	
12-2 V2	8679934	Water Pump and Motor	1	Schmidt	UPN130,220V.60HZ

View 43. Heat Exchanger View 2

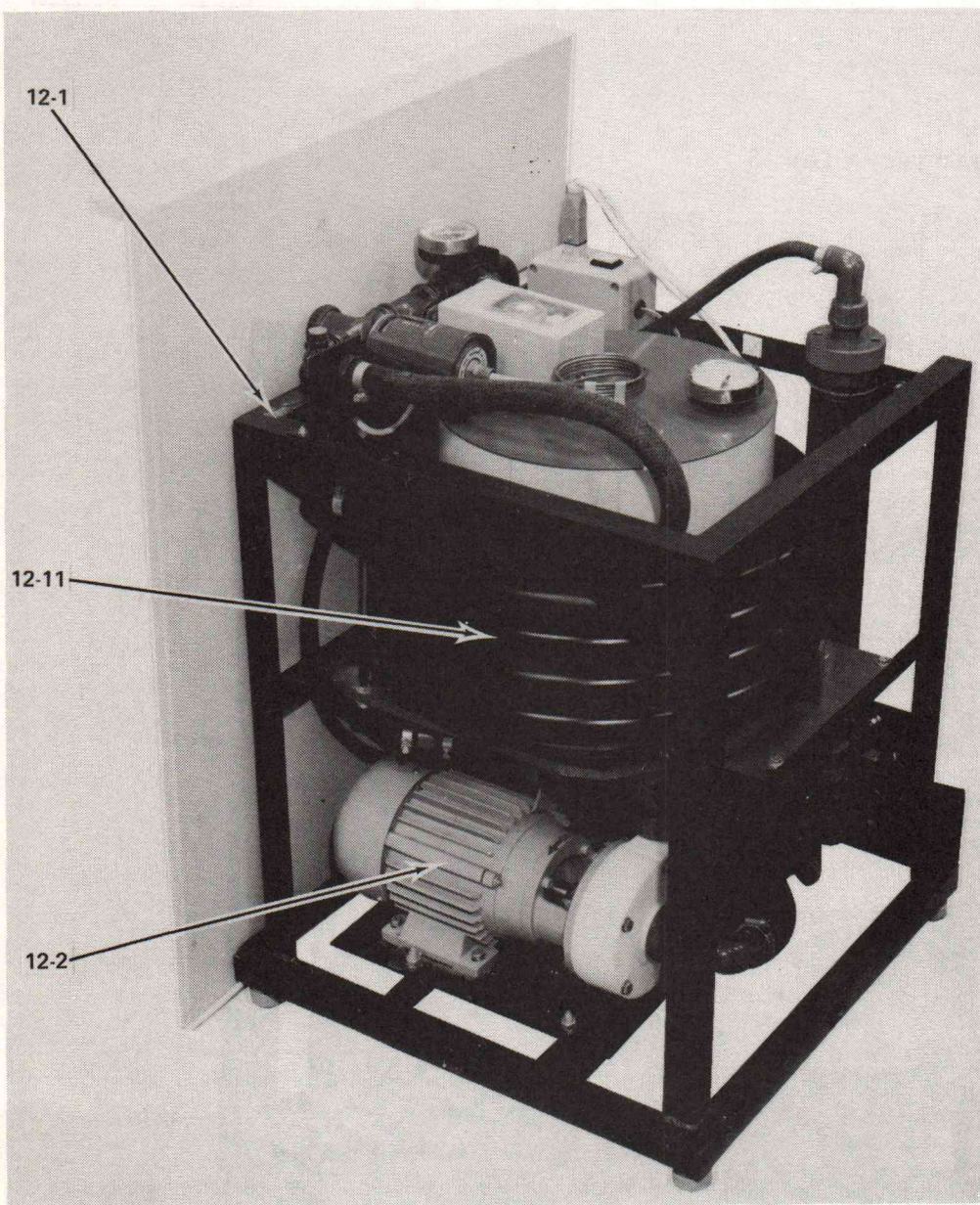


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
12-6 V3	5670310	Fuseholder	Q	Wickman	S11032.1112
12-7 V3	8679741	Fuse, 6.3 A, SB, 250V	1	Bruker	
12-8 V3	6016927	Heat Exchanger Control Box	1	Sopac	PR10
12-9 V3	6016928	Pressure Switch	1	Herion	01077,6000000
12-10 V3	6016929	Temperature Control--Thermostatic Valve	1	Bruker	
12-11 V3	6016930	Serpent Coil	1	Quiet	445 1/2" 0-12 BAR
12-12 V3	6016931	Pressure Reducer and Gauge	1	Scheich	0-120C 894 0063040
12-13 V3	6679733	Temperature Gauge	1	Oltan	01-121
12-14 V3	6016932	Pushbutton Start	1	Bruker	
12-15 V3	6016933	Relay (PCB)	1	Ringwald	REP 1525
12-16 V3	6016934	Fabric-Covered Hose 16mm	1	Schwab	18364041
12-17 V3	6016935	Float Switch--Auto Filling	1	Ruf	HR001220V.5A.
12-18 V3	8660591	Low-level Sensor Switch	1		

View 44. Heat Exchanger View 3

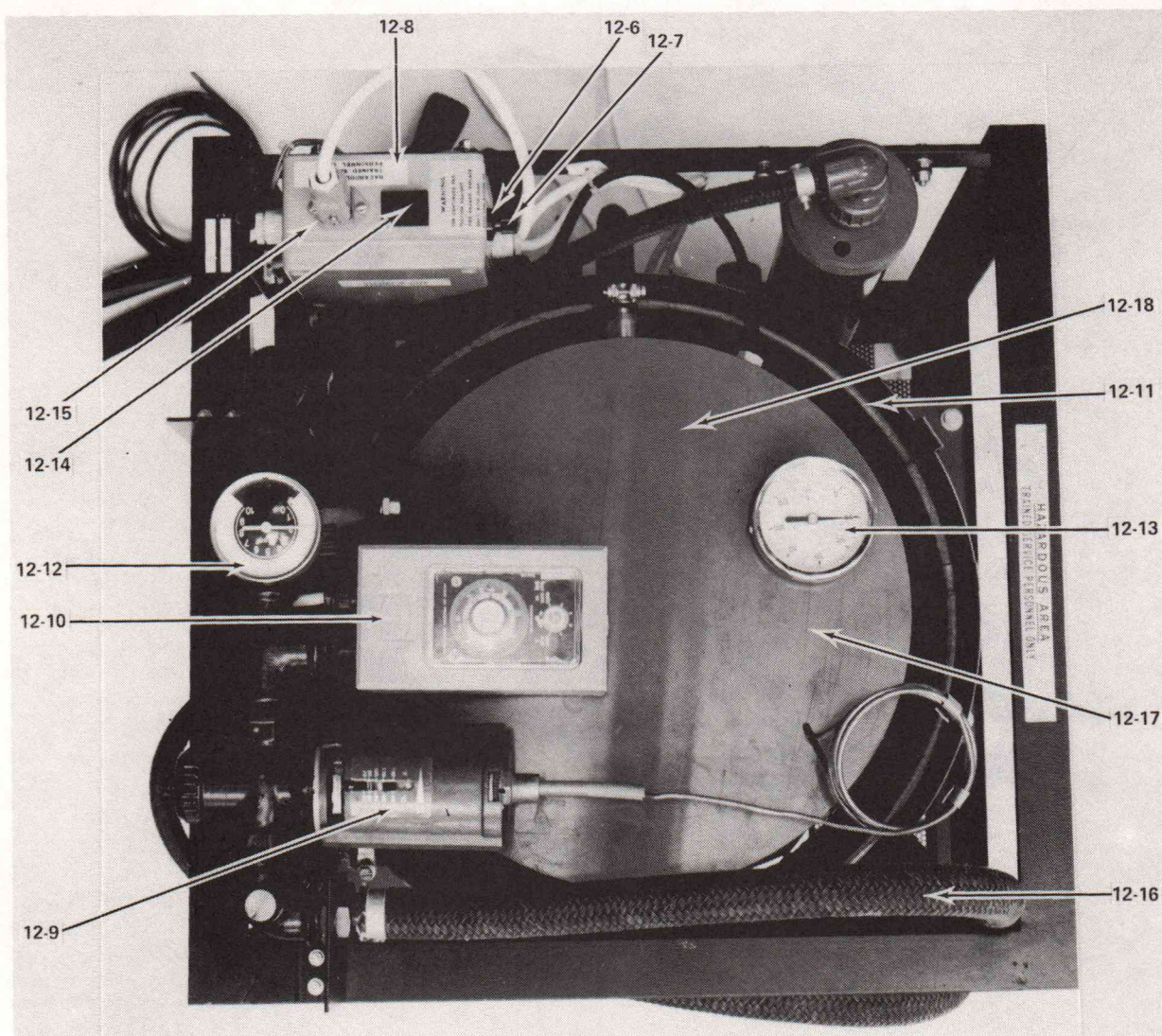


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
12-19 *	8679658	Water-Control Solenoid	1	Burkert	180a.220v.

2.13 VARIABLE TEMPERATURE CONTROLLER

FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
13-1 V1	8679704	VTC Unit (Entire Assembly)	1	Bruker	BVT1000
13-17 V1	6016949	Connector, 3 Prong Thermo	1	Thermoelectric	CNN 81300TX
13-20 V1	6016952	Td Potentiometer Control 10K	1	Draloric	
13-21 V1	6016953	Ti Potentiometer Control 500K	1	Draloric	
13-22 V1	6016954	G Potentiometer Control 100K	1	Draloric	
13-23 V1	6016955	Socket, 7 Position--Heater	1		
13-24 V1	6016956	Socket, 5 Position N2	1		
13-25 V1	6016957	Socket, 3 Prong Input Power	1		
13-27 V1	6016959	Socket, 5 Pin Security	1		

View 45. Variable Temperature Controller View 1

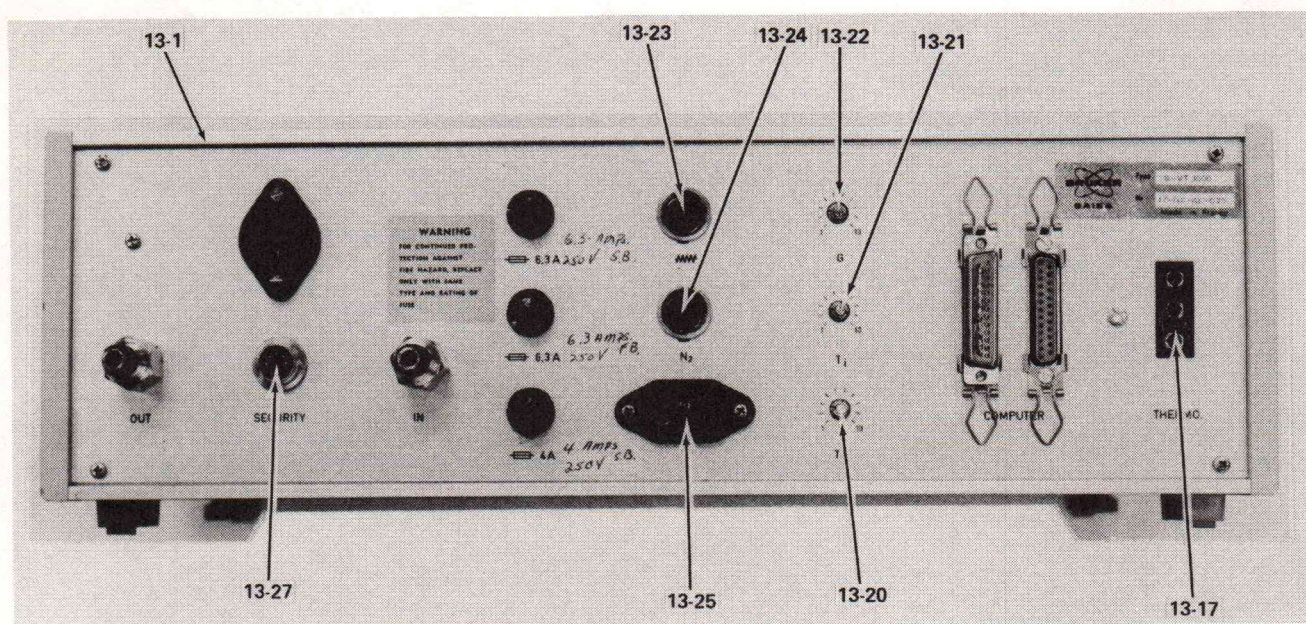


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
13-2 V2	8679705	Reference Digital (PCB)	1	Bruker	791104
13-3 V2	8679707	Security Amp. Board (PCB)	1	Bruker	791103
13-4 V2	8679706	Power Supply Alia Board (PCB)	1	Bruker	791102
13-5 V2	6016937	Ampli Thermocouple (PCB)	1	Bruker	791106
13-6 V2	6016939	Mother Board w/Sockets	1	Bruker	791101
13-7 V2	6016940	Interface Board (PCB)	1	Bruker	791110
13-8 V2	6016941	Front Panel Display (PCB)	1	Bruker	791105
13-9 V2	6016942	Error Signal Meter	1	Indicateur	620-59-AH-d2-CADRAW
				Bertram	59-62-03
13-10 V2	6016943	Heater Current % Meter	1	Indicateur	621-195-CL-D2-12V
				Bertram	
13-11 V2	8680579	LED, Red 5mm	1	Radiohm	CIP 202 1FSC
13-12 V2	6016944	Heater Power Limiter Switch and Pot	1	Radiohm	470 Ka
13-13 V2	6016945	N2 Evaporator Power Switch and Pot	1	Radiohm	CIP 202 1FSC
					47 Ka
13-14 V2	4838090	Power on/off	1	Microswitch	AHL32FBC7AD
13-15 V2	6016947	Power Supply +5V (PCB)	1	Bruker	791109
13-16 V2	6016948	Main VTC Transformer	1	Bruker	
13-18 V2	6016950	Electrolytic Cap, 3900 uF 80/100	1	Felsic	018 (5 SIC-SAFECO)
13-31 V2	8680300	Capacitor, 2200 uF, 25V	1	Sic Safeco	
13-32 V2	4112708	Button, Power on/off	1	Microswitch	AHL52-NIOR

View 46. Variable Temperature Controller View 2

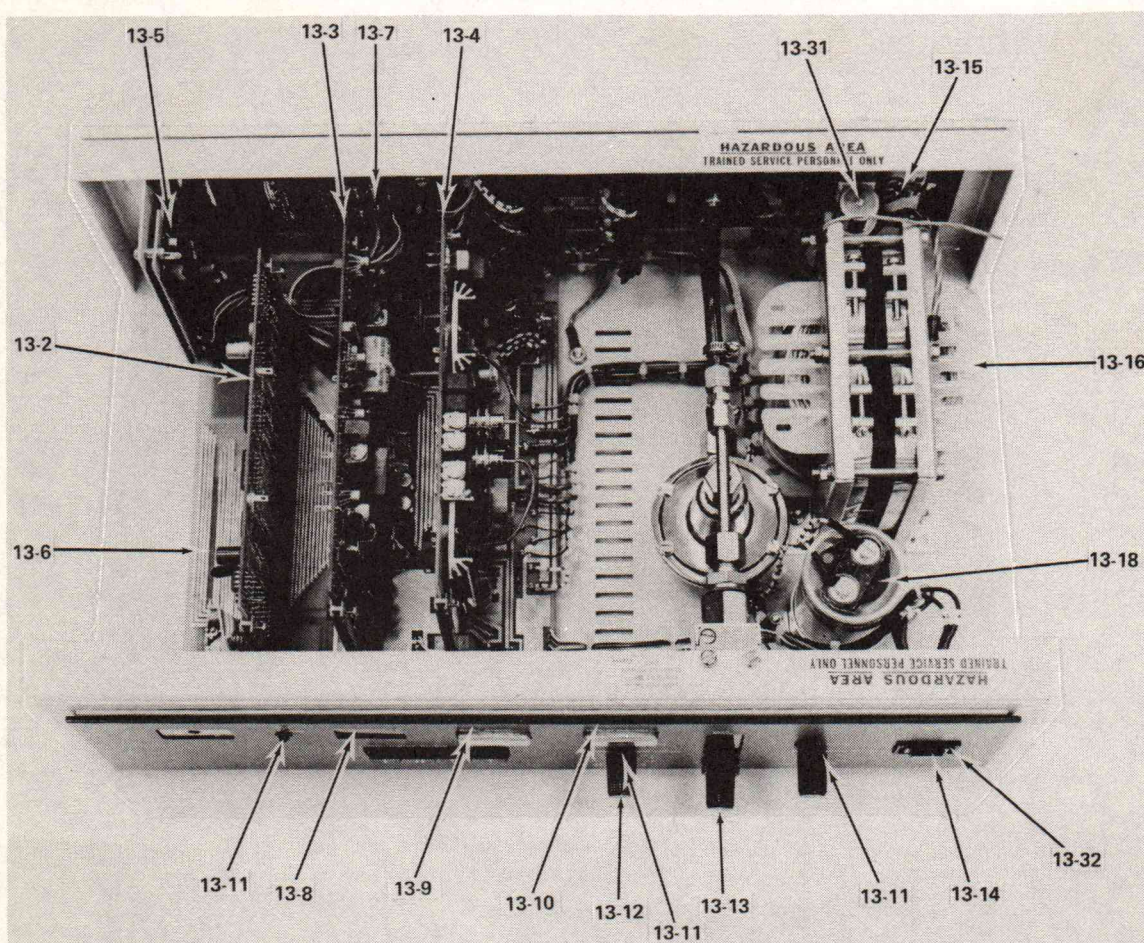


FIGURE ID AND VIEW	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
13-19 *	6016951	Gas Control Valve	1	Bruker	
13-26 *	6016958	Line Cord (Standard European)	1		
13-28 *	6016960	Plastic Hose			
13-29 *	6016961	Thermocouple 11Cu Const.			
13-30 *	6016962	SDC Cable			
13-33 *	4838503	Resistor, 1.8 Ohm (Brass clad)		Bruker	
13-34 *	6016837	Resistor, 2.2 Ohm (Brass clad)		Bruker	

2.14 MISCELLANECUS PARTS

FIGURE ITEM ID CODE	PART NUMBER	PART DESCRIPTION	QUANTITY	SUPPLIER	SUPPLIER CATALOG NUMBER
14-1 *	8675849	Synthesizer INTFC (PCB)	1	Bruker	
14-2 *	8680595	Shim Plates	2	Bruker	
14-3 *	6016963	Preamplifier to Console Cable	1	Bruker	
14-4 *	6016964	Console to Magnet Signal Cable	1	Bruker	
14-5 *	6016965	Yellow/Green Ground Cable	1		
14-6 *	6016966	Interface Cable for Mod 31 Disk	1	DRI*	
14-7 *	6016967	Plotter Signal Cable	1		
14-8 *	8680573	Plug, 2 Prong AC Adapter	1	Ettinger	12.18.018
14-9 *	323538	Green/Yellow wire -10 AWG		IBM	
14-10 *	323538	Green/Yellow wire -14 AWG		IBM	

1. The first part of the document is a list of the names of the persons who were present at the meeting. The names are listed in alphabetical order. The names are: [illegible]

2. The second part of the document is a list of the topics that were discussed at the meeting. The topics are listed in alphabetical order. The topics are: [illegible]

3. The third part of the document is a list of the actions that were taken at the meeting. The actions are listed in alphabetical order. The actions are: [illegible]

4. The fourth part of the document is a list of the decisions that were made at the meeting. The decisions are listed in alphabetical order. The decisions are: [illegible]

5. The fifth part of the document is a list of the recommendations that were made at the meeting. The recommendations are listed in alphabetical order. The recommendations are: [illegible]

3.0 NUMERICAL LISTING

The following list identifies the parts by part number.

	PART NO.	
9-31 *	317390	Resistor, 82 Ohm, 0.5W
14-9 V1	323538	Green/Yellow wire -10 AWG
14-10 V1	323539	Green/Yellow wire -14 AWG
4-4 V2	334235	Potentiometer, 10 K, 1-Turn
14-5 V1	347053	Yellow/Green Ground Cable # 12 AWG
7-30 V4	1582553	Pluggable IC 7438oc
7-35 V5	1847536	Ccnector, 3 Pin Power to MFE Drive
9-20 V3	2391667	Power Transistor 2N3716
7-32 V4	2392102	Pluggable IC 7404
7-33 V4	2392161	Pluggable IC 7406
9-22 *	2396628	Transistor MJ2500
9-23 *	2396629	Transistor MJ3000
10-41 V4	4109480	Fan
13-32 V2	4112708	Bezel, Power on/off
7-29 V4	4178618	Pluggable IC 8212
11-35 *	4212444	Line Power PB
11-28 V3	4388452	Connector, Burndy 19 Pin Round
10-55 V7	4431549	Power Supply Board 1
10-56 V7	4431550	Power Supply Board 2
10-12 V2	4433201	16K Memory (PCB)
10-13 V2	4433202	8K Memory (PCB)
10-15 V2	4433203	Memory Control Board (PCB-6)
10-16 V2	4433204	Address Board (version-2...PCB-7)
10-17 V2	4433205	Register Board (PCB-8)
10-18 V2	4433206	Ccntrl Board (PCB-9)
10-19 V2	4433207	Disk Interface Board (PCB-10) Mod 31
10-20 V2	4433208	Display Board (PCB-11)
10-21 V2	4433209	Sweep Control Board (PCB-12)
10-22 V2	4433210	Digitizer Board with Slow A-D (PCB-13)
10-23 V2	4433212	WP Pulser Board (PCB-13a)
10-24 V2	4433213	I/O Interface Board (vers.2...PCB-14)
10-14 V2	4433214	F1-F2 Board (PCB-1)
10-25 V2	4433217	Panel Adapter Board-IF (PCB-15)
7-31 V4	4433229	Pluggable IC 74126
2-5 V1	4433356	Connector, 25 Position Cannon

		PART NO.	
3-3	V2	4433356	Connector, Cannon, 25 Position
10-2	V1	4433387	LEDs, Red, 3mm
11-10	V1	4433387	LEDs, Red 3mm
10-3	V1	4433390	LEDs, Yellow, 3mm
10-4	V1	4433391	LEDs, Green, 3mm
11-31	V1	4812444	Line Power Pushbutton, Red
11-39	*	4812445	Cooling Water Distr. Inlet
10-49	*	4812458	Diode SSIT 2340
10-47	V4	4812459	Choke 40A
10-57	V6	4812460	Main Aspect Transformer
8-29	V2	4812461	220V Fan
10-42	V6	4812462	Electrolytic Cap, 47K uF +50/-10% @ 25V
10-43	V6	4812463	Electrolytic Cap, 10K uF +50/-10% @ 25V
10-44	V6	4812464	Electrolytic Cap, 10K uF +50/-10% @ 40V
5-22	V2	4812465	Broadband Preamp2
10-48	V6	4812465	Line Filter
1-13	V4	4812466	Socket, 3 Prong Input Power
10-31	V5	4812468	LEDs, Green 5mm
10-33	V5	4812469	Reset Switch (White)
10-46	V6	4812474	Resistor, 1K Ohm, 5W, 10%, WW
10-45	V6	4812475	Resistor, 470 Ohm, 5W, 10%, WW
10-51	V6	4812476	Terminal, 6 Pin
10-52	V6	4812477	Terminal, 3 Pin
1-6	V1	4838012	Fan
3-1	V1	4838013	Emergency Power Off (EPO) Switch
10-38	V6	4838039	Relay/Transformer Board
13-14	V2	4838090	Switch, Power on/off
1-25	*	4838448	Fuse, 6.3 A, FB, 250V
2-1	V1	4838449	Socket, 5 Prong Male w/cover
9-58	V2	4838449	Socket, 5 Pin Power w/Cover
2-2	V1	4838451	Power Receptacle, 3 Position, 220V
3-2	*	4838451	Power Receptacle, 3 Position, 220V
2-3	V1	4838452	Connector, 19 Position Circular
2-4	V1	4838453	Connector, 34 Position Burndy
5-24	V5	4838453	Socket, DecI/DecII 34 Position Burndy
6-12	V1	4838453	Connector, 34 Position Burndy
2-6	V2	4838454	Terminal Block, 22 Position (Screw)
2-7	V2	4838460	Terminal Block, 24 Position (Solder)
3-5	V2	4838462	Socket, 31 Position
5-4	V4	4838462	Socket, 31 Position For PCBs
9-8	*	4838462	Socket, 31 Position For PCBs
3-6	V3	4838463	Shim Pots, 10 Turn, 10K

		PART NO.	
4-14	V1	4838463	Potentiometers, 10K, 10-Turn
8-2	V2	4838463	Offset Pots, 3540s, 10-Turn
3-7	V3	4838464	Vernier Dials for Shim Pots
3-9	V4	4838466	Terminal Block, 30 Position (Solder)
3-10	*	4838467	Line Filter
4-2	V2	4838468	Lock Level Meter
4-12	V1	4838469	X, Y Fine Pots 500 OHM
4-17	V1	4838470	Display Cables I & II
4-5	V2	4838471	Phase/Pot 3 Turn
4-16	V1	4838472	Vertical Display Scaler Cable
4-8	V2	4838473	Receiver Gain Dial, 1-8K
4-7	V2	4838474	Vertical Scale Dial, 4-2048K
1-26	*	4838475	Regulator, 9V, 1C
8-3	V1	4838475	Vernier Dials (For Pots)
5-5	V1	4838476	Mismatch Control (PCB)
5-8	V2	4838477	Programmable Attenuator w/PCB
5-9	V2	4838478	Relay
5-10	V2	4838479	Relay Socket
5-12	V1	4838480	Heat Sink Assembly
5-13	V2	4838481	Filter Box
5-14	V2	4838482	X3 Tripler Box
5-15	V1	4838483	Refl/Transmit Power Ind. (PCB)
5-17	V1	4838484	Meter Board (PCB)
5-18	V1	4838485	Mode LEDs, (PCB)
7-37	V1	4838486	Connector, 9 Position Nylon Recept.
5-25	V5	4838487	BNC Connector, Female
5-26	*	4838488	Regulator, + or - 15V, +5V (PCB)
5-27	V4	4838489	Capacitor, .68 uF Filter, Ceramic
5-28	V4	4838490	Capacitor, 33 uF Tantalum, 16v
5-29	V2	4838491	Coax Cable w/ Straight SMB Conn. 40 CM
5-30	V2	4838492	Coax Cable w/90 SMB Conn. 40 CM
6-2	V2	4838493	Power Supply and Control (PCB)
6-4	V2	4838494	Preamp (PCB) w/Heatsink
6-5	V2	4838495	Voltage Regulator (PCB)
6-7	*	4838496	Power Transistor 2N3054
6-9	V2	4838497	Switch (PCB) Fixed Variable Frequency
7-39	V5	4838498	5 Conductor Cable (68CM)
6-14	V2	4838499	Variable Attenuator
7-2	V2	4838500	Socket, 3 Prong 220V Male w/Fuseholders
8-1	V1	4838501	X-Y Recorder (Entire Assembly)
7-40	V5	4838502	5 Conductor Cable (22CM)
13-33	*	4838503	Resistor, 1.8 Ohm (Brass clad)
7-6	V3	4838504	Flat Cable, 16 Conductor w/conn.

		PART NO.	
7-8	V3	4838505	MFE Model 700 Disk Drive--c,d,e,f,h
7-13	V1	4838507	Fuse, 315mA, SB, 250V
7-14	V1	4838508	Fuse, 630mA, SB, 250V
7-15	V2	4838509	Fuse, 2.0A, SB, 250V
10-39	V5	4858017	Socket Plug, 220V 3 Prong Male w/filt.
9-25	*	5214324	Silicne Diode IN4003
9-21	*	5252662	Power Transistor 2N3055
9-24	*	5252662	Transistor 2N5683
7-24	V4	5615703	Pluggable IC 8224
7-25	V4	5615704	Pluggable IC 8080A
7-28	V4	5615821	Pluggable ROM 8708
6-1	V1	5670107	Pulse Transmitter (Entire Assembly)
5-1	V1	5670161	HH Decoupler (Entire Assembly)
12-20	V1	5670162	Input Water Filter Assembly
12-1	V2	5670167	Heat Exchanger (Entire Assembly)
3-12	*	5670255	Cascode 2D (PCB) (Preamp 2D)
3-13	V4	5670256	PFP 2D (PCB)
3-14	V4	5670257	Transmitter Lock 2D (PCB)
3-15	V4	5670258	Receiver Lock 2D (PCB)
3-16	V4	5670259	Receiver FT (PCB)
3-17	V4	5670260	Transmitter F1 (PCB)
3-18	V4	5670261	Transmitter F2 (PCB)
4-9	V1	5670263	Receiver Gain (PCB)
4-6	V1	5670264	Comp., Lock, Signal Display Switches (PCB)
4-13	V1	5670265	Y-Automatic (PCB)
4-1	V1	5670266	Lock Power Switch (PCB)
4-10	V1	5670267	Data Blocks (PCB)
1-8	V2	5670268	Transformer
1-5	V1	5670269	25 V (PCB)
1-29	*	5670270	19V, 19V, 28V PCB
1-4	V1	5670271	19 V, 19 V (PCB)
1-3	V1	5670272	19 V, 24 V (PCB)
1-2	V1	5670273	15 V, 15 V, 28 V (PCB)
1-22	*	5670274	Electrolytic Cap, 3.3K uF
1-9	V2	5670275	Electrolytic Cap, Screw, 40/48V, 4.7K uF
1-1	V1	5670276	Console Power Supply (Entire Assembly)
8-31	V2	5670278	X-Y Amplifier (PCB)
8-32	V2	5670279	Power Supply and Phase Shifter (PCB)
8-9	V2	5670280	X-Drive Servomotor Asm.
8-15	V2	5670281	Y-Drive Servomotor Asm.
8-30	V2	5670282	Transformer, AC
1-27	*	5670283	Regulator, 28V, 1C
8-22	V1	5670284	Travel Limiter Microswitches

		PART NO.	
8-4	V2	5670285	Papersize A3/A4 (PCB)
8-5	V1	5670286	Pen Lift Switch (toggle--DTSP)
1-15	*	5670288	Regulator, 14V, IC
9-7	V1	5670289	Warning Unit (PCB)
9-6	V1	5670290	Shim A & B) (PCB)
9-5	V1	5670291	Shim Add (PCB)
9-4	V1	5670292	Rectifier (PCB)
9-3	V1	5670293	Current Stabilizer (PCB)
9-2	V1	5670294	Integrator (PCB)
9-1	V1	5670295	Flux Stabilizer (PCB)
3-8	V3	5670297	Mod. Pot. (1-turn), 1 MEG OHM
11-30	*	5670301	Shim Ccondenser (Capacitor)
9-36	V3	5670302	Electrolytic Cap, 4700 uF 150/180V
9-35	V3	5670303	Electrolytic Cap, 10 uF 180/250V
9-40	V4	5670304	Contact, 5 Pole 220V
11-19	V3	5670305	Transformer 12V--24V
9-52	V3	5670306	Transformer, Electronic
9-38	V4	5670307	Self Choke
1-14	V4	5670309	Connector, 20 Position Output
1-11	V4	5670310	Fuseholder (screw-in)
8-25	V2	5670310	Fuseholder, AC Input (Screw-In)
9-50	V2	5670310	Fuseholders
11-13	V3	5670310	Fuseholders
12-6	V3	5670310	Fuseholder
1-16	V2	5670311	Capacitor, 2.2 uF, 40/48V
11-21	V4	5670329	Probe Arm Drive Motor
11-26	V1	5670330	Probe Arm Limiter Micro Switches
11-36	*	5670331	Air Supply Tubing, 4MM ID/7MM OD
10-9	V1	5670334	Front Panel Board A--FPA (PCB)
10-10	V2	5670335	Front Panel Board B--FPB (PCB)
10-11	V2	5670336	Front Panel Board C--FPC (PCB)
10-27	V4	5670340	Mother Board
10-6	V1	5670341	Pushbutton Switches, w/LEDs
4-11	V2	5670345	Sweep Switches (Fast & Slow)
1-10	V3	5670346	Voltage Selection Switch
7-7	V1	6016821	Input Transformer, 220V
7-16	V5	6016822	Voltage Cable, 5 Conductor (55CM)
7-17	V1	6016823	Voltage Selector Switch
7-18	V1	6016824	Connector, 9 Position Nylon Plug
8-36	V1	6016825	X-Rubber Drive Ring (Clutch)
7-21	V1	6016826	Connector, 2 Pin Nylon (on FPB)
7-23	V4	6016827	Pluggable IC NEC L372D
8-37	V1	6016828	Ball Bearing (Front Rail)

		PART NO.	
8-27	V2	6016829	Socket, 3 Prong Input AC, 220V
7-26	V4	6016830	Pluggable IC 8238
7-27	V4	6016831	Pluggable IC 2111-1
7-34	V4	6016836	Pluggable IC Terminator Module
13-34	*	6016837	Resistor, 2.2 Ohm (Brass clad)
7-36	V3	6016838	Flat Cable, 50 Conductor, I/O
8-8	V2	6016839	Mylar Capacitor, 0.1 uF 1000V
8-10	V2	6016840	X-Drive Pulley
8-12	V2	6016841	X-Idler Pulley
8-13	V2	6016842	X-Drive Cord
8-14	V2	6016843	X-Drive Cord Spring
8-11	V2	6016844	X-Drive Potentiometer Pulley (Pos. Ref.)
8-17	V1	6016845	Y-Drive Pulley
8-16	V2	6016846	Y-Drive Potentiometer Pulley (Pos. Ref.)
8-18	V2	6016847	Y-Rubber Drive Ring Clutch)
8-19	V1	6016848	Y-Drive Cord
8-20	V1	6016849	Y-Drive Cord Spring
8-21	V1	6016850	Y-Idler Pulley
8-23	V1	6016851	Pen Lift Magnet
8-24	V1	6016852	Pen Lift Control Arm
8-26	V2	6016853	Fuse, 1.25A, SB, 250V
8-28	V2	6016854	Socket, 15 Pin Cannon (Signal)
5-21	V2	6016855	Broadband Preamp1
8-33	V1	6016856	Ball Bearings (Rear Rail)
8-34	V1	6016857	Connector, 12 Pin (For Servomotor)
9-10	*	6016858	Voltage Test (PCB)
9-11	V2	6016859	Socket, 30 Pin
9-12	V2	6016860	Socket, 26 Pin
9-13	V2	6016861	Socket, 39 Pin
9-14	V1	6016862	Socket, 3 Pin (Soldered to Small Bd.)
9-60	*	6016863	Socket, Main Power Box, 6 Pin
9-16	V1	6016864	Fabric Covered Hose
9-17	V4	6016865	Rubber Water Hoses
9-18	V3	6016866	Resistor, .15 Ohm, 10W
13-34	*	6016868	Thermal Switch (N2 Htr) 70 degree C
9-28	*	6016869	Power Diode SKR 45/04
9-27	*	6016870	Power Diode SKN 50/04
9-29	*	6016871	Capacitor, .22 uF 400V
9-30	*	6016872	Resistor, 6.5K Ohm, 0.5W
9-32	*	6016874	Terminal Blk., 3 Position
9-33	V3	6016875	Thermal Switches Typ161
9-34	V3	6016876	Cold Plate (Passbank)
9-39	V3	6016877	Main Transformer

		PART NO.	
9-37	*	6016878	Resistor, 270 Ohm 10W
9-44	*	6016879	Relay, 24V, 10 A, 250V, VDE0660
9-45	V4	6016880	Delta Y Selector Switch
9-46	V1	6016881	Fan
9-48	V3	6016882	Terminal Strip, 32 Position (Solder)
9-47	V3	6016883	Terminal Strip, 4 Position (Screw)
1-28	*	6016884	Capacitor, 10K uF
9-49	V3	6016884	Terminal Strip, 18 Position
5-19	*	6016885	Slow Device Code Decoder w/DAC
9-54	V2	6016886	Water Hose Inlet/Cutlet Conn.
5-20	V2	6016887	Thermal Switch
9-55	V2	6016888	Socket, Probe Motor Ctrl. 4 Pin
9-56	*	6016889	Socket, Therm. Warning 5 Pin
9-57	*	6016890	Socket, Heat Exc. Intlk 4 Pin
9-59	V2	6016891	Power Connector Thumb Lugs
9-26	*	6016892	ZL47 Diode
10-7	V1	6016893	Thumb Switches (Lever Wheel)
10-5	*	6016894	On/Step Toggle Switch (DTSP)
10-8	V1	6016895	Power (Key) Switch CN/OFF
10-29	V3	6016898	Flat Cable, 50 Conductor (to FPC)
10-28	V3	6016899	Teletype Board (TTY)
10-26	V7	6016901	Plastic PC Board Dividers
10-30	V3	6016902	Flat Cable, 34 Conductor Jumper
10-61	*	6016903	Fuse, 1A, FB, 250V, MDX
10-62	*	6016904	Fuse, 5A, FB, 250V, MDX
10-63	*	6016905	Fuse, 10A, FB, 250V, MDX
11-4	V1	6016906	Sample Depth Gauge
11-8	V1	6016907	Potentiometers, 10-Turn, 10K, Drift
11-11	V1	6016908	Top Cover Hinge Dampers
11-12	V3	6016909	Selector Switch, 220V/380V
11-14	V3	6016911	CB1 (Main Line) 25A
11-15	V3	6016912	CB2 (Power) 20A
11-16	V3	6016913	CB3 (Console) 5A
11-17	V3	6016914	CB4 (Heat Exchanger) 5A
11-18	V3	6016915	Contacter, Mainline
11-22	*	6016916	Terminal Strip, 3 Position
11-23	*	6016917	Terminal Strip, 9 Position
11-24	*	6016918	Capacitor, 10 uF 240V/260V
11-1	V2	6016919	Water In/Out "O" Rings ()
11-27	*	6016920	Probe Arm Travel Adjusting Blocks
11-25	V4	6016922	Thermal Switch (Bottom of Magnet)
11-33	V1	6016925	Flux Pushbutton
12-3	V2	6016926	Capacitor (Starter) 12MFD, 400Vac

		PART NO.	
12-8	V3	6016927	Heat Exchanger Control Box
12-9	V3	6016928	Pressure Switch
12-10	V3	6016929	Temperature Control--Thermostatic Valve
12-11	V3	6016930	Serpent Coil
12-12	V3	6016931	Pressure Reducer and Gauge
12-14	V3	6016932	Pushbutton Start
12-15	V3	6016933	Relay (PCB)
12-16	V3	6016934	Fabric-Covered Hose 16mm
12-17	V3	6016935	Float Switch--Auto Filling
5-32	V2	6016936	SMB Coax Cable w/90
13-5	V2	6016937	Ampli Thermocouple (PCB)
5-31	V2	6016938	SMB Coax Cable Straight
13-6	V2	6016939	Mother Board w/Sockets
13-7	V2	6016940	Interface Board (PCB)
13-8	V2	6016941	Front Panel Display (PCB)
13-9	V2	6016942	Error Signal Meter
13-10	V2	6016943	Heater Current % Meter
13-12	V2	6016944	Heater Power Limiter Switch and Pot
13-13	V2	6016945	N2 Evaporator Power Switch and Pot
13-15	V2	6016947	Power Supply +5V (PCB)
13-16	V2	6016948	Main VTC Transformer
13-17	V1	6016949	Connector, 3 Prong Thermo
13-18	V2	6016950	Electrolytic Cap, 3900 uF 80/100
13-19	*	6016951	Gas Control Valve
13-20	V1	6016952	Td Potentiometer Control 10K
13-21	V1	6016953	Ti Potentiometer Control 500K
13-22	V1	6016954	G Potentiometer Control 100K
13-23	V1	6016955	Socket, 7 Position--Heater
13-24	V1	6016956	Socket, 5 Position N2
13-25	V1	6016957	Socket, 3 Prong Input Power
13-26	*	6016958	Line Cord (Standard European)
13-27	V1	6016959	Socket, 5 Pin Security
13-28	*	6016960	Plastic Hose
13-29	*	6016961	Thermocouple 11Cu Const.
13-30	*	6016962	SDC Cable
14-3	V1	6016963	Preamplifier to Console Cable
14-4	V1	6016964	Console to Magnet Signal Cable
14-6	V1	6016966	Interface Cable for Mod 31 Disk
14-7	V1	6016967	Plotter Signal Cable
1-12	V4	6016983	Fuse, 6.3 A, MB, 250V
9-19	V3	814146	Resistor, 22 Ohm, 0.5W
7-5	V2	8670587	Slave Terminator (PCB)
1-23	V2	8672467	Fuse Clips

		PART NO.	
7-12	V1	8672467	Fuse Clips
1-20	V2	8679650	Power Rectifiers (Side of Heat Sink)
9-15	V3	8679653	Shim Prestabilizer (PCB)
12-19	*	8679658	Water-Control Solenoid
4-3	V1	8679664	Lock Level Meter Board (PCB)
7-22	V4	8679666	Floppy Drive Controller Board (PCB)
7-9	V1	8679667	Power Supply Board (PS1)
7-10	V1	8679668	Power Supply Boards (PS2)
7-11	V1	8679669	Motherboard (PS3)
7-3	V2	8679670	Rear Panel Connector (FCB)
7-19	V1	8679671	Front Panel Board (PCB)
7-38	V3	8679672	Master Logic PCB
7-4	V2	8679673	I/O Terminator (PCB)
10-1	V1	8679675	Processor (Entire Assembly)
3-4	V2	8679676	Delta Sweep (PCB)
9-53	*	8679703	Water Feed Thru Manifold
13-1	V1	8679704	VTC Unit (Entire Assembly)
13-2	V2	8679705	Reference Digital (PCB)
13-4	V2	8679706	Power Supply Alim Board (PCB)
13-3	V2	8679707	Security Amp. Board (PCB)
8-7	V1	8679715	Power On/Off Toggle Switch (Yellow)
8-6	V1	8679716	Fan On/Off Toggle Switch (Red)
1-7	V3	8679720	Inductor
1-17	V2	8679723	Terminal Block, 6 Position (white)
11-38	*	8679723	Cooling Water Exhaust Outlet
11-2	V1	8679724	Air Control Valve
11-3	V1	8679725	Air Control Gauge
11-7	V1	8679726	Magnet Switch (PCB)
11-6	V1	8679727	Magnet Pushbutton
11-32	V1	8679728	Reset Pushbutton
11-9	V1	8679731	Potentiometers, 10-Turn, 1 K, Current
12-4	V1	8679732	Ion Exchange Column
12-13	V3	8679733	Temperature Gauge
9-51	V2	8679736	Fuse, 4A MDX (American)
10-34	V5	8679740	Fuseholders (Screw-in)
10-35	V5	8679741	Fuse, 6.3A, SB, 250V
12-7	V3	8679741	Fuse, 6.3 A, SB, 250V
10-36	V5	8679742	Fuse, 1.0A, SB, 250V
9-43	V3	8679743	Fuse, .1 A, FB, 250V
10-37	V5	8679743	Fuse, 100mA, FB, 250V
12-5	V1	8679797	Ion Exchange Resin
6-11	V2	8679845	Meter-matching Load
4-15	V1	8679846	Large Display Panel Flat Cable

		PART NO.	
14-1	V1	8679849	Synthesizer INTFC (PCB)
1-24	V2	8679874	Fuse, 3.15 A, FB, 250V
6-6	V2	8679882	Directional Coupler
12-2	V2	8679934	Water Pump and Motor
9-61	*	8679978	Phas Loss Detector (PCB)
10-63	*	8679985	Mem Control Board (PCB) Ver II
11-34	*	8680173	Temp Sensor, Cooling Water
7-1	V1	8680175	Floppy Drive (Entire Assembly)
6-13	V2	8680226	Synthesizer Plug In (X 2)
9-41	V4	8680236	Motor Control (PCB)
13-31	V2	8680300	Capacitor, 2200 uF, 25V
11-29	V1	8680342	Air Supply Tubing
9-42	V3	8680555	Fuse, .2A, SB, 250V
10-59	*	8680555	Fuse, .2A, SB, 250V
10-60	*	8680557	Fuse, 1A, FB, 250V
10-58	V7	8680560	Fuse, .5A, FB, 250V
10-50	V7	8680571	Diode IN4148
5-23	V2	8680572	Broadband Final Amp
10-40	*	8680573	Socket Plug, 220V 3 Prong Female
14-8	V1	8680573	Plug, 2 Prong AC Adapter
10-53	*	8680574	Line cord
1-18	V2	8680575	Socket, 15 Position Card
5-7	V4	8680575	Socket, 15 Position For PCBs
6-10	V1	8680575	Socket, 15 Position For PCBs
10-54	V7	8680575	Connector, 15 Pin Female
10-32	V5	8680579	LEDs, Red 5mm
13-11	V2	8680579	LED, Red 5mm
8-35	V1	8680580	Pen Carriage
11-37	*	8680588	"O" Rings
12-21	*	8680589	Power Cable
12-22	*	8680590	Control Cable
12-18	V3	8680591	Low-level Sensor Switch
1-19	V2	8680592	Power Rectifiers (Middle of Heat Sink)
11-5	V1	8680593	Up/Down Control (PCB)
11-20	V3	8680594	Relay Board (PCB)
14-2	V1	8680595	Shim Plates
6-15	V2	8680597	Mixing Unit 2
3-11	V4	8680598	19F Lock (PCB)
5-2	V1	8680599	On-Off Comm. Board (PCB)
5-6	V1	8680600	Digit Modulation (PCB)
5-3	V1	8680601	Comp Dec. and Attenuator Board (PCB)

		PART NO.	
1-21	*	8680602	Heat Sink
5-11	V2	8680603	B.B. Amplifier Stage and Coupler (PCB)
5-16	V3	8680604	Power Level Meter
6-8	V2	8680606	Mixing Unit 1
6-3	V2	8680607	Amplifier 4-37 (PCB)
9-9	*	8686237	VCE Meter
8-38	V2	8689795	X-Drive Cable
8-39	V2	8689796	Y-Drive Cable

1. The first part of the document is a letter from the President of the United States to the Congress, dated January 1, 1863. It is a very important document, as it contains the President's annual message to Congress. The letter is written in a formal, dignified style, and it is one of the most important documents in the history of the United States. It is a document that has been read and studied by many generations of Americans, and it is a document that has shaped the course of the nation's history. The letter is a masterpiece of American literature, and it is a document that is as relevant today as it was in 1863. It is a document that is a testament to the power of the written word, and it is a document that is a testament to the power of the American people. It is a document that is a testament to the power of the United States, and it is a document that is a testament to the power of the American dream. It is a document that is a testament to the power of the American spirit, and it is a document that is a testament to the power of the American people. It is a document that is a testament to the power of the United States, and it is a document that is a testament to the power of the American dream. It is a document that is a testament to the power of the American spirit, and it is a document that is a testament to the power of the American people.

4.0 ALPHABETICAL LISTING

The following list identifies the parts by part name, in alphabetical order.

ALPHABETICAL LISTING			
11-37	*	8680588	"O" Rings
10-16	V2	4433204	Address Board (version-2...PCB-7)
11-3	V1	8679725	Air Ccntrol Gauge
11-2	V1	8679724	Air Ccntrol Valve
11-29	V1	8680342	Air Supply Tubing
11-36	*	5670331	Air Supply Tubing, 4MM ID/7MM OD
13-5	V2	6016937	Ampli Thermocouple (PCB)
6-3	V2	8680607	Amplifier 4-37 (PCB)
5-11	V2	8680603	B.B. Amplifier Stage and Coupler (PCB)
8-37	V1	6016828	Ball Bearing (Front Rail)
8-33	V1	6016856	Ball Bearings (Rear Rail)
13-32	V2	4112708	Bezel, Power on/off
5-23	V2	8680572	Broadband Final Amp
5-21	V2	6016855	Broadband Preamp1
5-22	V2	4812465	Broadband Preamp2
5-25	V5	4838487	BNC Ccnector, Female
12-3	V2	6016926	Capacitor (Starter) 12MFD,400Vac
9-29	*	6016871	Capacitor, .22 uF 400V
5-27	V4	4838489	Capacitor, .68 uF Filter, Ceramic
11-24	*	6016918	Capacitor, 10 uF 240V/260V
1-28	*	6016884	Capacitor, 10K uF
1-16	V2	5670311	Capacitor, 2.2 uF, 40/48V
13-31	V2	8680300	Capacitor, 2200 uF, 25V
5-28	V4	4838490	Capacitor, 33 uF Tantalum, 16v
3-12	*	5670255	Cascode 2D (PCB) (Preamp 2D)
10-47	V4	4812459	Choke 40A
5-29	V2	4838491	Coax Cable w/ Straight SMB Conn. 40 CM
5-30	V2	4838492	Coax Cable w/90 SMB Conn. 40 CM
9-34	V3	6016876	Cold Flate (Passbank)
5-3	V1	8680601	Ccmp Dec. and Attenuator Board (PCB)
4-6	V1	5670264	Comp., Lock, Signal Display Switches (PCB)
11-28	V3	4388452	Connector, Burndy 19 Pin Round
3-3	V2	4433356	Ccnector, Cannon, 25 Fosition
10-54	V7	8680575	Connector, 15 Pin Female
2-3	V1	4838452	Connector, 19 Pcsition Circular

ALPHABETICAL LISTING

7-21	V1	6016826	Connector, 2 Pin Nylon (on FPB)
1-14	V4	5670309	Connector, 20 Position Output
2-5	V1	4433356	Connector, 25 Position Cannon
7-35	V5	1847536	Connector, 3 Pin Power to MFE Drive
13-17	V1	6016949	Ccnnecter, 3 Prcng Thermo
2-4	V1	4838453	Ccnnecter, 34 Position Burndy
6-12	V1	4838453	Connector, 34 Pcsition Burndy
7-18	V1	6016824	Connector, 9 Position Nylon Plug
7-37	V1	4838486	Connector, 9 Position Nylon Recept.
8-34	V1	6016857	Connector, 12 Pin (For Servomotor)
14-4	V1	6016964	Console to Magnet Signal Cable
1-1	V1	5670276	Ccnsole Power Supply (Entire Assembly)
11-18	V3	6016915	Contacter, Mainline
9-40	V4	5670304	Contactactor, 5 Pole 220V
10-18	V2	4433206	Ccntrl Board (PCB-9)
12-22	*	8680590	Control Cable
11-39	*	4812445	Cooling Water Distr. Inlet
11-38	*	8679723	Cooling Water Exhaust Outlet
9-3	V1	5670293	Current Stabilizer (PCB)
11-14	V3	6016911	CB1 (Main Line) 25A
11-15	V3	6016912	CB2 (Power) 20A
11-16	V3	6016913	CE3 (Console) 5A
11-17	V3	6016914	CE4 (Heat Exchanger) 5A
4-10	V1	5670267	Data Blocks (PCB)
3-4	V2	8679676	Delta Sweep (PCB)
9-45	V4	6016880	Delta Y Selector Switch
5-6	V1	8680600	Digit Modulation (PCB)
10-22	V2	4433210	Digitizer Board with Slow A-D (PCB-13)
10-50	V7	8680571	Diode IN4148
10-49	*	4812458	Diode SSIT 2340
6-6	V2	8679882	Directional Coupler
10-19	V2	4433207	Disk Interface Board (PCB-10) Mod 31
10-20	V2	4433208	Display Board (PCB-11)
4-17	V1	4838470	Display Cables I & II
1-9	V2	5670275	Electrolytic Cap, Screw, 40/48V, 4.7K uF
9-35	V3	5670303	Electrclytic Cap, 10 uF 180/250V
10-43	V6	4812463	Electrolytic Cap, 10K uF +50/-10% @ 25V
10-44	V6	4812464	Electrolytic Cap, 10K uF +50/-10% @ 40V
1-22	*	5670274	Electrolytic Cap, 3.3K uF
13-18	V2	6016950	Electrolytic Cap, 3900 uF 80/100
10-42	V6	4812462	Electrolytic Cap, 47K uF +50/-10% @ 25V
9-36	V3	5670302	Electrclytic Cap, 4700 uF 150/180V
3-1	V1	4838013	Emergency Power Off (EPO) Switch
13-9	V2	6016942	Error Signal Meter
9-16	V1	6016864	Fabric Covered Hose

ALPHABETICAL LISTING

12-16	V3	6016934	Fabric-Covered Hose 16mm
1-6	V1	4838012	Fan
9-46	V1	6016881	Fan
10-41	V4	4109480	Fan
8-6	V1	8679716	Fan On/Off Toggle Switch (Red)
5-13	V2	4838481	Filter Box
7-6	V3	4838504	Flat Cable, 16 Conductor w/conn.
10-30	V3	6016902	Flat Cable, 34 Conductor Jumper
10-29	V3	6016898	Flat Cable, 50 Conductor (to FPC)
7-36	V3	6016838	Flat Cable, 50 Conductor, I/O
12-17	V3	6016935	Float Switch--Auto Filling
7-1	V1	8680175	Floppy Drive (Entire Assembly)
7-22	V4	8679666	Floppy Drive Controller Board (PCB)
11-33	V1	6016925	Flux Pushbutton
9-1	V1	5670295	Flux Stabilizer (PCB)
7-19	V1	8679671	Front Panel Board (PCB)
10-9	V1	5670334	Front Panel Board A--FPA (PCB)
10-10	V2	5670335	Front Panel Board B--FPB (PCB)
10-11	V2	5670336	Front Panel Board C--FPC (PCB)
13-8	V2	6016941	Front Panel Display (PCB)
7-12	V1	8672467	Fuse Clips
1-23	V2	8672467	Fuse Clips
9-43	V3	8679743	Fuse, .1 A, FB, 250V
10-59	*	8680555	Fuse, .2A, SB, 250V
10-58	V7	8680560	Fuse, .5A, FB, 250V
10-36	V5	8679742	Fuse, 1.0A, SB, 250V
8-26	V2	6016853	Fuse, 1.25A, SB, 250V
10-60	*	8680557	Fuse, 1A, FB, 250V
10-61	*	6016903	Fuse, 1A, FB, 250V, MDX
10-63	*	6016905	Fuse, 10A, FB, 250V, MDX
10-37	V5	8679743	Fuse, 100mA, FB, 250V
7-15	V2	4838509	Fuse, 2.0A, SB, 250V
1-24	V2	8679874	Fuse, 3.15 A, FB, 250V
7-13	V1	4838507	Fuse, 315mA, SB, 250V
9-51	V2	8679736	Fuse, 4A MDX (American)
10-62	*	6016904	Fuse, 5A, FB, 250V, MDX
1-25	*	4838448	Fuse, 6.3 A, FB, 250V
1-12	V4	6016983	Fuse, 6.3 A, MB, 250V
12-7	V3	8679741	Fuse, 6.3 A, SB, 250V
10-35	V5	8679741	Fuse, 6.3A, SB, 250V
7-14	V1	4838508	Fuse, 630mA, SB, 250V
9-42	V3	8680555	Fuse,.2A, SB, 250V
12-6	V3	5670310	Fuseholder

ALPHABETICAL LISTING

1-11	V4	5670310	Fuseholder (screw-in)
8-25	V2	5670310	Fuseholder, AC Input (Screw-In)
9-50	V2	5670310	Fuseholders
11-13	V3	5670310	Fuseholders
10-34	V5	8679740	Fuseholders (Screw-in)
10-14	V2	4433214	F1-F2 Board (PCB-1)
13-22	V1	6016954	G Potentiometer Control 100K
13-19	*	6016951	Gas Control Valve
14-9	V1	323538	Green/Yellow wire -10 AWG
14-10	V1	323539	Green/Yellow wire -14 AWG
12-1	V2	5670167	Heat Exchanger (Entire Assembly)
12-8	V3	6016927	Heat Exchanger Control Box
1-21	*	8680602	Heat Sink
5-12	V1	4838480	Heat Sink Assembly
13-10	V2	6016943	Heater Current % Meter
13-12	V2	6016944	Heater Power Limiter Switch and Pot
5-1	V1	5670161	HH Decoupler (Entire Assembly)
10-24	V2	4433213	I/O Interface Board (vers.2...PCB-14)
7-4	V2	8679673	I/O Terminator (PCB)
1-7	V3	8679720	Inductor
7-7	V1	6016821	Input Transformer, 220V
12-20	V1	5670162	Input Water Filter Assembly
9-2	V1	5670294	Integrator (PCB)
13-7	V2	6016940	Interface Board (PCB)
14-6	V1	6016966	Interface Cable for Mod 31 Disk
12-4	V1	8679732	Ion Exchange Column
12-5	V1	8679797	Ion Exchange Resin
4-15	V1	8679846	Large Display Panel Flat Cable
10-53	*	8680574	Line cord
13-26	*	6016958	Line Cord (Standard European)
3-10	*	4838467	Line Filter
10-48	V6	4812465	Line Filter
11-31	V1	4812444	Line Power Pushbutton, Red
11-35	*	4212444	Line Power PB
4-2	V2	4838468	Lock Level Meter
4-3	V1	8679664	Lock Level Meter Board (PCB)
4-1	V1	5670266	Lock Power Switch (PCB)
12-18	V3	8680591	Low-level Sensor Switch
13-11	V2	8680579	LED, Red 5mm
10-31	V5	4812468	LEDs, Green 5mm
10-4	V1	4433391	LEDs, Green, 3mm
11-10	V1	4433387	LEDs, Red 3mm
10-32	V5	8680579	LEDs, Red 5mm

ALPHABETICAL LISTING

10-2	V1	4433387	LEDs, Red, 3mm
10-3	V1	4433390	LEDs, Yellow, 3mm
11-6	V1	8679727	Magnet Pushbutton
11-7	V1	8679726	Magnet Switch (PCB)
10-57	V6	4812460	Main Aspect Transformer
9-39	V3	6016877	Main Transformer
13-16	V2	6016948	Main VTC Transformer
7-38	V3	8679672	Master Logic PCB
10-63	*	8679985	Mem Control Board (PCB) Ver II
10-15	V2	4433203	Memory Control Board (PCB-6)
5-17	V1	4838484	Meter Board (PCB)
6-11	V2	8679845	Meter-matching Load
5-5	V1	4838476	Mismatch Control (PCB)
6-8	V2	8680606	Mixing Unit 1
6-15	V2	8680597	Mixing Unit 2
3-8	V3	5670297	Mod. Pot. (1-turn), 1 MEG OHM
5-18	V1	4838485	Mode LEDs, (PCB)
10-27	V4	5670340	Mother Board
13-6	V2	6016939	Mother Board w/Scckets
7-11	V1	8679669	Motherboard (PS3)
9-41	V4	8680236	Motor Control (PCB)
8-8	V2	6016839	Mylar Capacitor, 0.1 uF 1000V
7-8	V3	4838505	MFE Model 700 Disk Drive--c,d,e,f,h
13-13	V2	6016945	N2 Evaporator Power Switch and Pot
8-2	V2	4838463	Offset Pots, 3540s, 10-Turn
5-2	V1	8680599	On-Off Comm. Board (PCB)
10-5	*	6016894	On/Step Toggle Switch (DTSP)
10-25	V2	4433217	Panel Adapter Board-IF (PCB-15)
8-4	V2	5670285	Papersize A3/A4 (PCB)
8-35	V1	8680580	Pen Carriage
8-24	V1	6016852	Pen Lift Control Arm
8-23	V1	6016851	Pen Lift Magnet
8-5	V1	5670286	Pen Lift Switch (toggle--DTSP)
9-61	*	8679978	Phas loss Detector (PCB)
4-5	V2	4838471	Phase/Pot 3 Turn
13-28	*	6016960	Plastic Hose
10-26	V7	6016901	Plastic PC Board Dividers
14-7	V1	6016967	Plotter Signal Cable
14-8	V1	8680573	Plug, 2 Prong AC Adapter
7-23	V4	6016827	Pluggable IC NEC L372D
7-34	V4	6016836	Pluggable IC Terminator Module
7-27	V4	6016831	Pluggable IC 2111-1
7-32	V4	2392102	Pluggable IC 7404

ALPHABETICAL LISTING

7-33	V4	2392161	Pluggable IC 7406
7-31	V4	4433229	Pluggable IC 74126
7-30	V4	1582553	Pluggable IC 74380c
7-25	V4	5615704	Pluggable IC 8080A
7-29	V4	4178618	Pluggable IC 8212
7-24	V4	5615703	Pluggable IC 8224
7-26	V4	6016830	Pluggable IC 8238
7-28	V4	5615821	Pluggable ROM 8708
4-4	V2	334235	Potentiometer, 10 K, 1-Turn
11-9	V1	8679731	Potentiometers, 10-Turn, 1 K, Current
11-8	V1	6016907	Potentiometers, 10-Turn, 10K, Drift
4-14	V1	4838463	Potentiometers, 10K, 10-Turn
10-8	V1	6016895	Power (Key) Switch CN/OFF
12-21	*	8680589	Power Cable
9-59	V2	6016891	Power Connector Thumb Lugs
9-27	*	6016870	Power Diode SKN 50/04
9-28	*	6016869	Power Diode SKR 45/04
5-16	V3	8680604	Power Level Meter
8-7	V1	8679715	Power On/Off Toggle Switch (Yellow)
2-2	V1	4838451	Power Receptacle, 3 Position, 220V
3-2	*	4838451	Power Receptacle, 3 Position, 220V
1-19	V2	8680592	Power Rectifiers (Middle of Heat Sink)
1-20	V2	8679650	Power Rectifiers (Side of Heat Sink)
13-15	V2	6016947	Power Supply +5V (PCB)
6-2	V2	4838493	Power Supply and Control (PCB)
8-32	V2	5670279	Power Supply and Phase Shifter (PCB)
13-4	V2	8679706	Power Supply Alim Board (PCB)
7-9	V1	8679667	Power Supply Board (PS1)
10-55	V7	4431549	Power Supply Board 1
10-56	V7	4431550	Power Supply Board 2
7-10	V1	8679668	Power Supply Boards (PS2)
6-7	*	4838496	Power Transistor 2N3054
9-21	*	5252662	Power Transistor 2N3055
9-20	V3	2391667	Power Transistor 2N3716
6-4	V2	4838494	Preamp (PCB) w/Heatsink
14-3	V1	6016963	Preamp to Console Cable
12-12	V3	6016931	Pressure Reducer and Gauge
12-9	V3	6016928	Pressure Switch
11-21	V4	5670329	Probe Arm Drive Motor
11-26	V1	5670330	Probe Arm Limiter Micro Switches
11-27	*	6016920	Probe Arm Travel Adjusting Blocks
10-1	V1	8679675	Processor (Entire Assembly)
5-8	V2	4838477	Programmable Attenuator w/PCB

ALPHABETICAL LISTING

6-1	V1	5670107	Pulse Transmitter (Entire Assembly)
12-14	V3	6016932	Pushbutton Start
10-6	V1	5670341	Pushbutton Switches, w/LEDs
3-13	V4	5670256	PFP 2D (PCB)
7-3	V2	8679670	Rear Panel Connector (PCB)
3-16	V4	5670259	Receiver FT (PCB)
4-9	V1	5670263	Receiver Gain (PCB)
4-8	V2	4838473	Receiver Gain Dial, 1-8K
3-15	V4	5670258	Receiver Lock 2D (PCB)
9-4	V1	5670292	Rectifier (PCB)
13-2	V2	8679705	Reference Digital (PCB)
5-15	V1	4838483	Refl/Transmit Power Ind. (PCB)
10-17	V2	4433205	Register Board (PCB-8)
5-26	*	4838488	Regulator, + or - 15V, +5V (PCB)
1-15	*	5670288	Regulator, 14V, 1C
1-27	*	5670283	Regulator, 28V, 1C
1-26	*	4838475	Regulator, 9V, 1C
5-9	V2	4838478	Relay
12-15	V3	6016933	Relay (PCB)
11-20	V3	8680594	Relay Board (PCB)
5-10	V2	4838479	Relay Socket
10-38	V6	4838039	Relay/Transformer Board
9-44	*	6016879	Relay, 24V, 10 A, 250V, VDE066C
11-32	V1	8679728	Reset Pushbutton
10-33	V5	4812469	Reset Switch (White)
9-18	V3	6016866	Resistor, .15 Ohm, 10W
13-33	*	4838503	Resistor, 1.8 Ohm (Brass clad)
10-46	V6	4812474	Resistor, 1K Ohm, 5W, 10%, WW
13-34	*	6016837	Resistor, 2.2 Ohm (Brass clad)
9-19	V3	814146	Resistor, 22 Ohm, 0.5W
9-37	*	6016878	Resistor, 270 Ohm 10W
10-45	V6	4812475	Resistor, 470 Ohm, 5W, 10%, WW
9-30	*	6016872	Resistor, 6.5K Ohm, 0.5W
9-31	*	317390	Resistor, 82 Ohm, 0.5W
9-17	V4	6016865	Rubber Water Hoses
11-4	V1	6016906	Sample Depth Gauge
13-3	V2	8679707	Security Amp. Board (PCB)
11-12	V3	6016909	Selector Switch, 220V/380V
9-38	V4	5670307	Self Choke
12-11	V3	6016930	Serpent Coil
9-6	V1	5670290	Shim A & B) (PCB)
9-5	V1	5670291	Shim Add (PCB)
11-30	*	5670301	Shim Condenser (Capacitor)

ALPHABETICAL LISTING

14-2	V1	8680595	Shim Plates
3-6	V3	4838463	Shim Pots, 10 Turn, 10K
9-15	V3	8679653	Shim Frestabilizer (PCB)
9-25	*	5214324	Siliccone Diode IN4003
7-5	V2	8670587	Slave Terminator (PCB)
5-19	*	6016885	Slow Device Code Decoder w/DAC
10-40	*	8680573	Socket Plug, 220V 3 Prong Female
10-39	V5	4858017	Socket Plug, 220V 3 Prong Male w/filt.
5-24	V5	4838453	Socket, DecI/DecII 34 Position Burndy
9-57	*	6016890	Socket, Heat Exc. Intlk 4 Pin
9-60	*	6016863	Socket, Main Power Box, 6 Pin
9-55	V2	6016888	Socket, Probe Motor Ctrl. 4 Pin
9-56	*	6016889	Socket, Therm. Warning 5 Pin
8-28	V2	6016854	Socket, 15 Pin Cannon (Signal)
1-18	V2	8680575	Socket, 15 Position Card
5-7	V4	8680575	Socket, 15 Position For PCBs
6-10	V1	8680575	Socket, 15 Position For PCBs
9-12	V2	6016860	Socket, 26 Pin
9-14	V1	6016862	Socket, 3 Pin (Scldered to Small Bd.)
8-27	V2	6016829	Socket, 3 Prong Input AC, 220V
1-13	V4	4812466	Socket, 3 Prong Input Power
13-25	V1	6016957	Socket, 3 Prong Input Power
7-2	V2	4838500	Socket, 3 Prong 220V Male w/Fuseholders
9-11	V2	6016859	Socket, 30 Pin
3-5	V2	4838462	Socket, 31 Position
5-4	V4	4838462	Socket, 31 Position For PCBs
9-8	*	4838462	Socket, 31 Position For PCBs
9-13	V2	6016861	Socket, 39 Pin
9-58	V2	4838449	Socket, 5 Pin Power w/Cover
13-27	V1	6016959	Socket, 5 Pin Security
13-24	V1	6016956	Socket, 5 Position N2
2-1	V1	4838449	Socket, 5 Prong Male w/cover
13-23	V1	6016955	Socket, 7 Position--Heater
10-21	V2	4433209	Sweep Control Board (PCB-12)
4-11	V2	5670345	Sweep Switches (Fast & Slow)
6-9	V2	4838497	Switch (PCB) Fixed Variable Frequency
13-14	V2	4838090	Switch, Power on/off
14-1	V1	8679849	Synthesizer INTFC (PCB)
6-13	V2	8680226	Synthesizer Plug In (X 2)
13-30	*	6016962	SDC Cable
5-32	V2	6016936	SMB Coax Cable w/90
5-31	V2	6016938	SMB Coax Cable Straight
13-20	V1	6016952	Td Potentiometer Control 10K

ALPHABETICAL LISTING

10-28	V3	6016899	Teletype Board (TTY)
11-34	*	8680173	Temp Sensor, Cocling Water
12-10	V3	6016929	Temperature Control--Thermostatic Valve
12-13	V3	8679733	Temperature Gauge
9-32	*	6016874	Terminal Blk., 3 Position
2-6	V2	4838454	Terminal Block, 22 Position (Screw)
2-7	V2	4838460	Terminal Block, 24 Position (Solder)
3-9	V4	4838466	Terminal Block, 30 Position (Solder)
1-17	V2	8679723	Terminal Block, 6 Position (white)
9-49	V3	6016884	Terminal Strip, 18 Position
11-22	*	6016916	Terminal Strip, 3 Position
9-48	V3	6016882	Terminal Strip, 32 Position (Solder)
9-47	V3	6016883	Terminal Strip, 4 Position (Screw)
11-23	*	6016917	Terminal Strip, 9 Position
10-52	V6	4812477	Terminal, 3 Pin
10-51	V6	4812476	Terminal, 6 Pin
5-20	V2	6016887	Thermal Switch
11-25	V4	6016922	Thermal Switch (Bottom of Magnet)
13-34	*	6016868	Thermal Switch (N2 Htr) 70 degree C
9-33	V3	6016875	Thermal Switches Typ161
13-29	*	6016961	Thermc Couplee11Cu Const.
10-7	V1	6016893	Thumb Switches (Lever Wheel)
13-21	V1	6016953	Ti Potentiometer Control 500K
11-11	V1	6016908	Top Cover Hinge Dampers
1-8	V2	5670268	Transformer
11-19	V3	5670305	Transformer 12V--24V
8-30	V2	5670282	Transformer, AC
9-52	V3	5670306	Transformer, Electronic
9-22	*	2396628	Transistor MJ2500
9-23	*	2396629	Transistor MJ3000
9-24	*	5252662	Transistor 2N5683
3-17	V4	5670260	Transmitter F1 (PCB)
3-18	V4	5670261	Transmitter F2 (PCB)
3-14	V4	5670257	Transmitter Lock 2D (PCB)
8-22	V1	5670284	Travel Limiter Microswitches
11-5	V1	8680593	Up/Down Control (PCB)
6-14	V2	4838499	Variable Attenuator
8-3	V1	4838475	Vernier Dials (For Pots)
3-7	V3	4838464	Vernier Dials for Shim Pots
4-16	V1	4838472	Vertical Display Scaler Cable
4-7	V2	4838474	Vertical Scale Dial, 4-2048K
7-16	V5	6016822	Vcltge Cable, 5 Conductor (55CM)
6-5	V2	4838495	Voltage Regulator (PCB)

ALPHABETICAL LISTING

1-10	V3	5670346	Voltage Selection Switch
7-17	V1	6016823	Voltage Selector Switch
9-10	*	6016858	Voltage Test (PCB)
9-9	*	8686237	VCE Meter
13-1	V1	8679704	VTC Unit (Entire Assembly)
9-7	V1	5670289	Warning Unit (PCB)
9-53	*	8679703	Water Feed Thru Manifold
9-54	V2	6016886	Water Hose Inlet/Outlet Conn.
11-1	V2	6016919	Water In/Out "O" Rings ()
12-2	V2	8679934	Water Pump and Motor
12-19	*	8679658	Water-Control Solenoid
10-23	V2	4433212	WP Pulser Board (PCB-13a)
8-38	V2	8689795	X-Drive Cable
8-13	V2	6016842	X-Drive Cord
8-14	V2	6016843	X-Drive Cord Spring
8-11	V2	6016844	X-Drive Potentiometer Pulley (Pos. Ref.)
8-10	V2	6016840	X-Drive Pulley
8-9	V2	5670280	X-Drive Servomotor Asm.
8-12	V2	6016841	X-Idler Pulley
8-36	V1	6016825	X-Rubber Drive Ring (Clutch)
8-31	V2	5670278	X-Y Amplifier (PCB)
8-1	V1	4838501	X-Y Recorder (Entire Assembly)
4-12	V1	4838469	X, Y Fine Pots 500 OHM
5-14	V2	4838482	X3 Tripler Box
4-13	V1	5670265	Y-Automatic (PCB)
8-39	V2	8689796	Y-Drive Cable
8-19	V1	6016848	Y-Drive Cord
8-20	V1	6016849	Y-Drive Cord Spring
8-16	V2	6016846	Y-Drive Potentiometer Pulley (Pos. Ref.)
8-17	V1	6016845	Y-Drive Pulley
8-15	V2	5670281	Y-Drive Servomotor Asm.
8-21	V1	6016850	Y-Idler Pulley
8-18	V2	6016847	Y-Rubber Drive Ring Clutch)
14-5	V1	347053	Yellow/Green Ground Cable # 12 AWG
9-26	*	6016892	Z147 Diode
1-2	V1	5670273	15 V, 15 V, 28 V (PCB)
10-12	V2	4433201	16K Memory (PCB)
1-4	V1	5670271	19 V, 19 V (PCB)
1-3	V1	5670272	19 V, 24 V (PCB)
3-11	V4	8680598	19F Lock (PCB)
1-29	*	5670270	19V, 19V, 28V PCB
8-29	V2	4812461	220V Fan
1-5	V1	5670269	25 V (PCB)
7-40	V5	4838502	5 Conductor Cable (22CM)
7-39	V5	4838498	5 Conductor Cable (68CM)
10-13	V2	4433202	8K Memory (PCB)

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